

# OPERATOR'S

INSTRUCTION MANUAL

For the Care and Operation of ...



Est. 1842

# CASE



## MODEL "A" COMBINE

*Ninth Edition*

## J. I. CASE CO.

RACINE - WISCONSIN - U.S.A.



## TO PURCHASERS OF NEW CASE MACHINES

Congratulations on your purchase of a CASE machine. Welcome to the ever-increasing number of satisfied CASE owners.

The dependability and economical performance of your new CASE machine will prove that you were wise in making this choice.

The organization back of your machine has been building quality farm equipment for more than a century. Your CASE machine was built in one of the largest and best equipped plants in the world. In this factory quality materials, the finest precision machinery, high grade workmanship, thorough inspection, and complete testing equipment are combined to give you the best in performance and economical operation.

The care which you give your machine will have a great deal to do with the service and satisfaction you get from it. By observing the precautions and suggestions in this manual, your CASE machine will serve you well for many years. Make this manual your guide. Should you need information not covered here, or should your machine require special servicing, contact your Case dealer. He has trained men who are kept informed on the best methods of servicing CASE machines in the field or in his shop.

When it becomes necessary, after long use, to replace certain parts on your machine, be sure to use only genuine CASE parts, which insure proper fit and continued good service. These may be obtained from your CASE dealer. It is always helpful to provide him with the MODEL of your machine in addition to a description (and part number if available) of the parts required.

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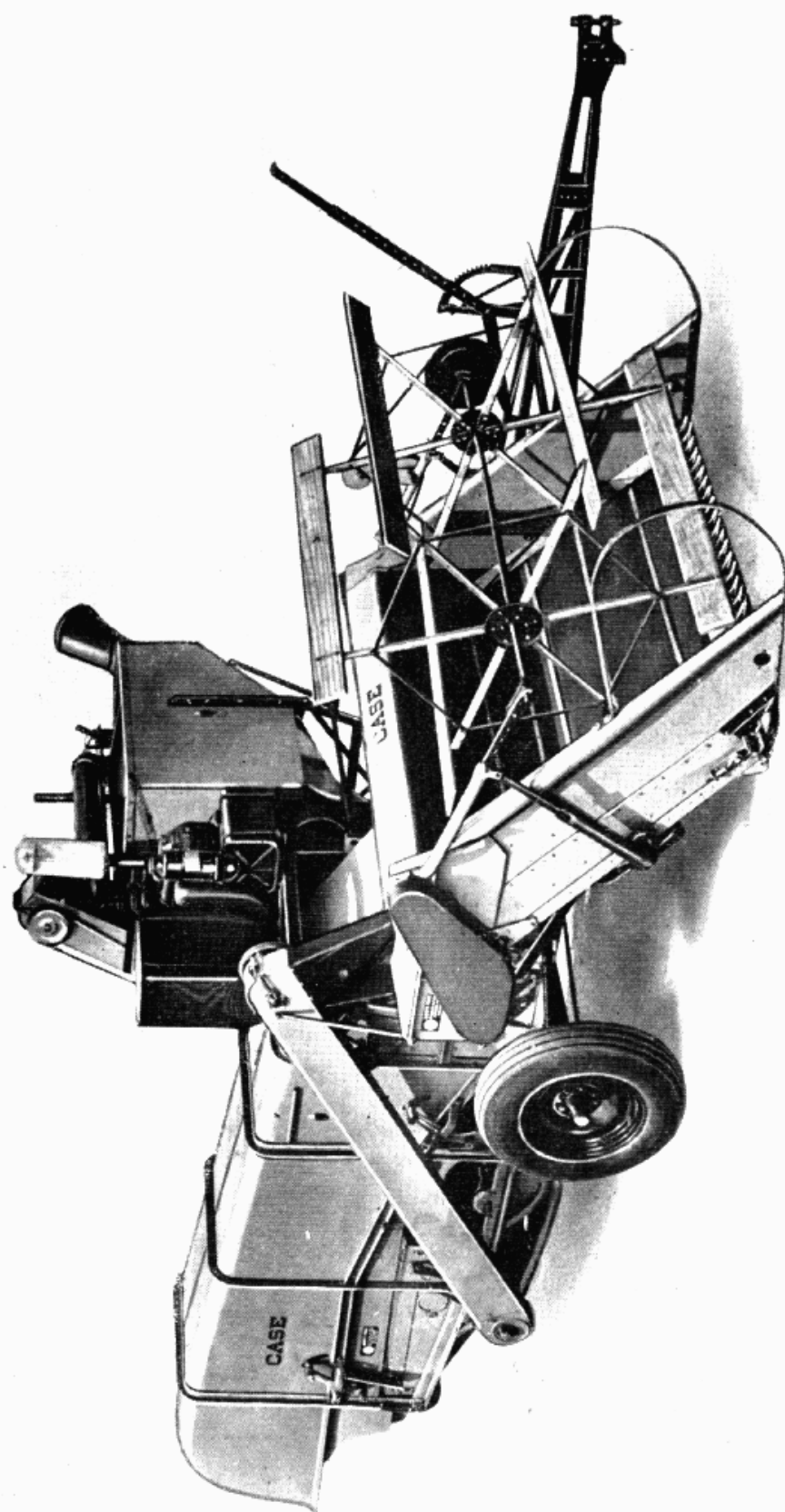


Fig. 1  
MODEL "A" COMBINE

## GENERAL SPECIFICATIONS OF THE CASE MODEL "A" COMBINE

Distance between Divider Points .....	72"
Length Cutter Bar .....	72"
Right or Left Hand Cut .....	Right
Sickle Front or to side of Cylinder .....	Front
Header Hinged or Rigid .....	Hinged
Range Cutting Height .....	$\frac{3}{4}$ " to 26"
Canvas Conveyor or Spiral .....	Canvas
Width Canvas .....	72"
Reel Ground or Power Drive .....	Power
Reel Adjustable from Tractor Seat .....	No
Number of Bats on Reel .....	3-4-6
Type of Cylinder .....	Spike Tooth or Rub Bar
Number of Rub Bars on Cylinder .....	10
Width of Cylinder .....	28"
Diameter of Cylinder .....	22"
Speed Range of Cylinder .....	247 — 1300 RPM
Width Thresher Rear .....	28"
**Length Separator Surface .....	111"
Type of Thresher .....	Unit — Rack
Strokes Per Minute .....	230
Width and Length Chaffer Sieve .....	40" x 28"
Length Adjustable Chaffer Extension .....	13"
Width and Length Cleaning Sieve .....	40" x 28"
Recleaner Available .....	Yes
Power Take Off or Engine Drive .....	Both
Power Take Off Speed Normal .....	535 RPM
Cross Shaft Speed .....	618 RPM
Drive to Cylinder .....	Roller Chain
Cylinder Speeds Regular .....	360 & 1080 RPM
Cylinder Speed Special .....	247 — 1300 RPM
Number of Wheels .....	2
Tire Size, Main Wheels .....	7.50 x 18" — 6 ply
Cylinder Bearings .....	Ball
Beater Bearings .....	Roller
Beater Speed .....	423 RPM
Special Beater Speed .....	350 RPM
Fan Bearings .....	Roller
Fan Speed .....	508 RPM
Sickle Speed .....	400 Strokes per Minute
Main Wheel Bearings .....	Tapered Roller
Length with Tractor Hitch .....	23' 8"
*Width Overall Cutting .....	10'
*Width Overall Transport .....	10'
Height over Elevator .....	10' 6"
Capacity Grain Bin .....	24 Bushel
Gravity or Elevator Dump .....	Auger
Shipping Weight, Standard Equipped .....	P T O 3522 lbs. Engine 3835 lbs.

\*With shortest cutter bar indicated.

\*\*Measured in a straight line from center of cylinder shaft to point of discharge of straw



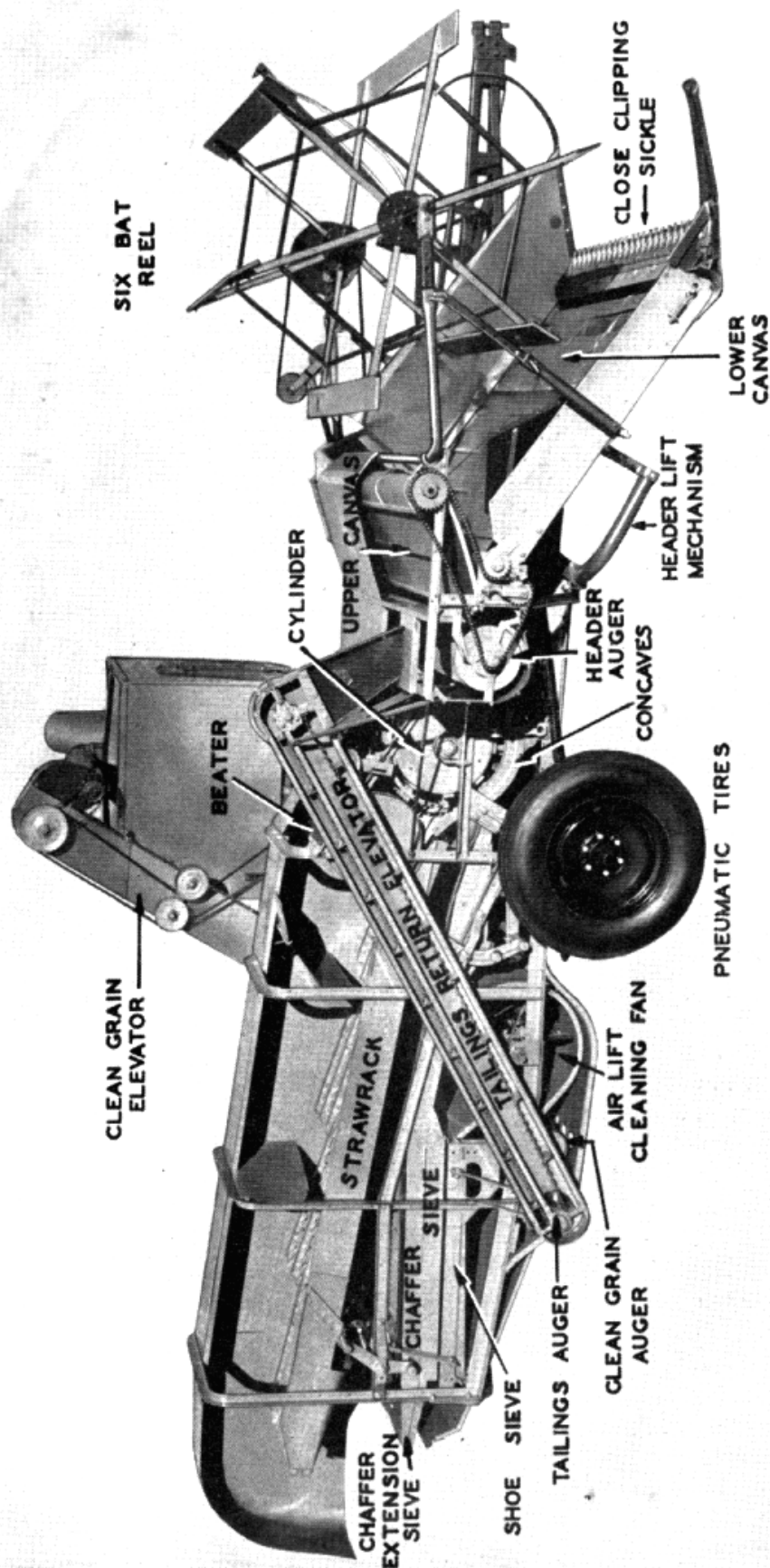
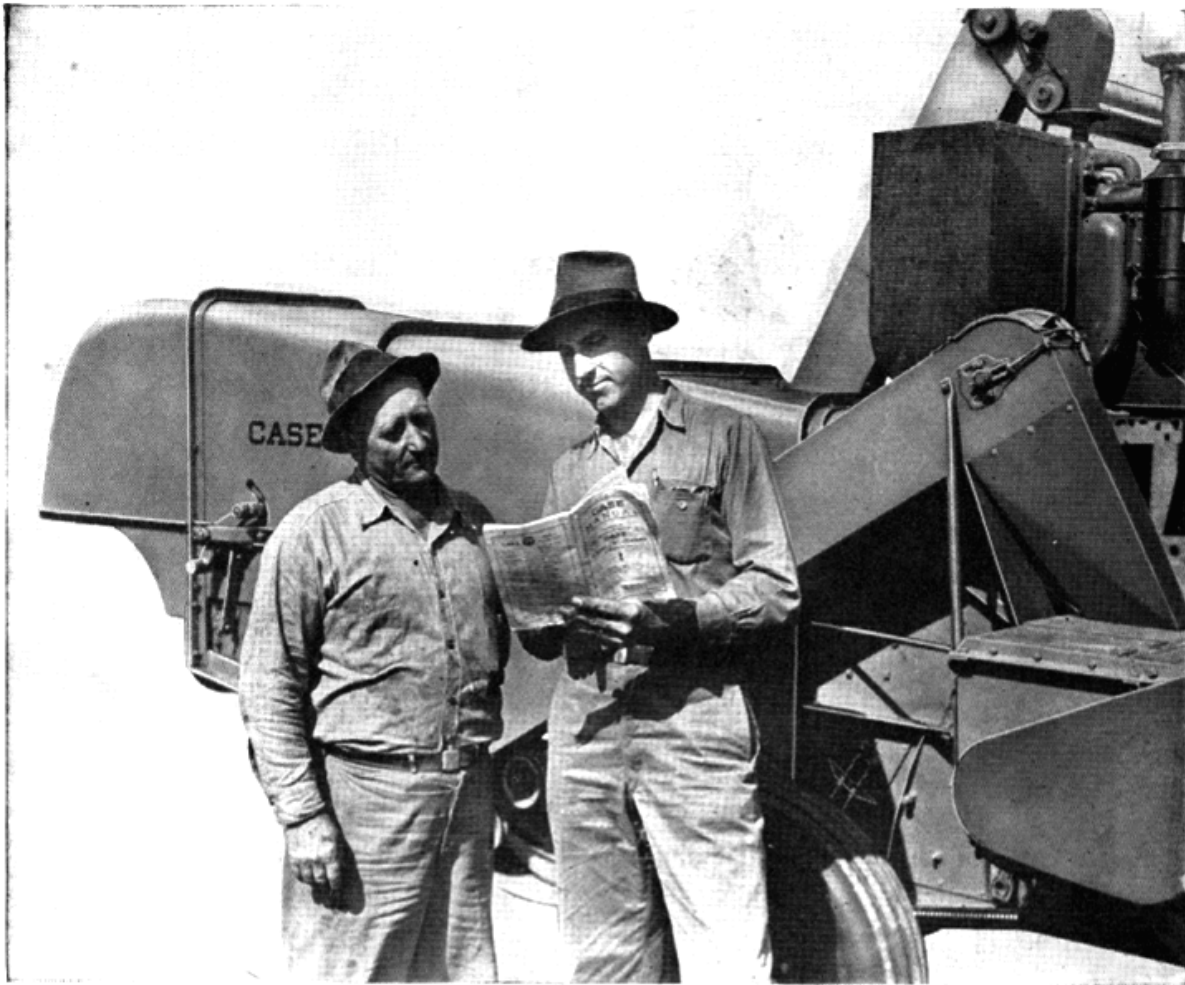


Fig. 2

CROSS SECTION VIEW OF MODEL "A" COMBINE

**NOTE:** Your new Case Combine has been properly set up, inspected and adjusted by your Case Dealer before delivery to you.



**Fig. 3**  
**Accepting New Machine**

## **IMPORTANT PRECAUTIONS**

**Instructions.** The following instructions are for your guidance. Read carefully so as to understand fully the various mechanisms, and adjustments which may be required for successful operation of this machine.

**Upon Receipt of a New Machine Examine it Carefully and Report Shortages or Damaged Parts Immediately to Your Case Dealer.** Make certain that all bolts are securely tightened and provided with lockwashers.

**NOTE:** This machine leaves the factory without any lubricant in the gear box. Before operating it should be filled to the proper level with a good grade of gear oil having a viscosity or body of SAE 160.



**Operation:** This machine should not be operated unless in charge of a competent person thoroughly familiar with common hazards associated with this type of machinery.

Shields are provided for your protection and the machine must not be operated without them.

If power take-off combine is delivered without the telescoping shields, see your nearest Case Dealer or branch.

Be sure all Universal Joints are securely fastened to their respective shafts.

When coupling combine to tractor for the first time, be sure to check the length of the telescoping shaft for the correct operating clearance.

Always use a suitable safe pin for coupling the combine drawbar to the tractor drawbar.

Never allow anyone to ride on any part of the machine while it is in motion. If spectators must be accommodated, let them ride in the wagon or truck.

Do not climb on machine when in operation.

Do not allow small children or inexperienced help around the machine while it is in motion.

Adjustments on the machine should never be made while machine is operating. For safety, always shut off the power of the tractor or engine when making adjustments.

Do not try to remove any obstructions from the cutter bar, feeder, or other parts of combine while machine is in operation. Stop the mechanism.

Always be sure that no tools or other objects are on the cutter bar, or other places where they may accidentally be run into the machine, especially after the machine has been standing idle or after any adjustments have been made.

No new machine should ever be loaded to full capacity until it has been "run in" for a reasonable length of time. It is recommended that the machine be "run in" at half speed for at least two hours. Stop the machine, check all bearings for heat, also chains and belts for stretching and alignment.

Do not install canvas until combine has been "run in".

The overrunning jump clutch is regularly packed with grease to prevent rusting. If, upon starting the combine, the clutch jumps too easily, due to the grease working into the jaws, flush excess grease away with kerosene.

Examine the machine frequently for loose bolts.

**Ordering parts.** When ordering parts be sure to give Serial Number of your machine, and Name and Number of part wanted.

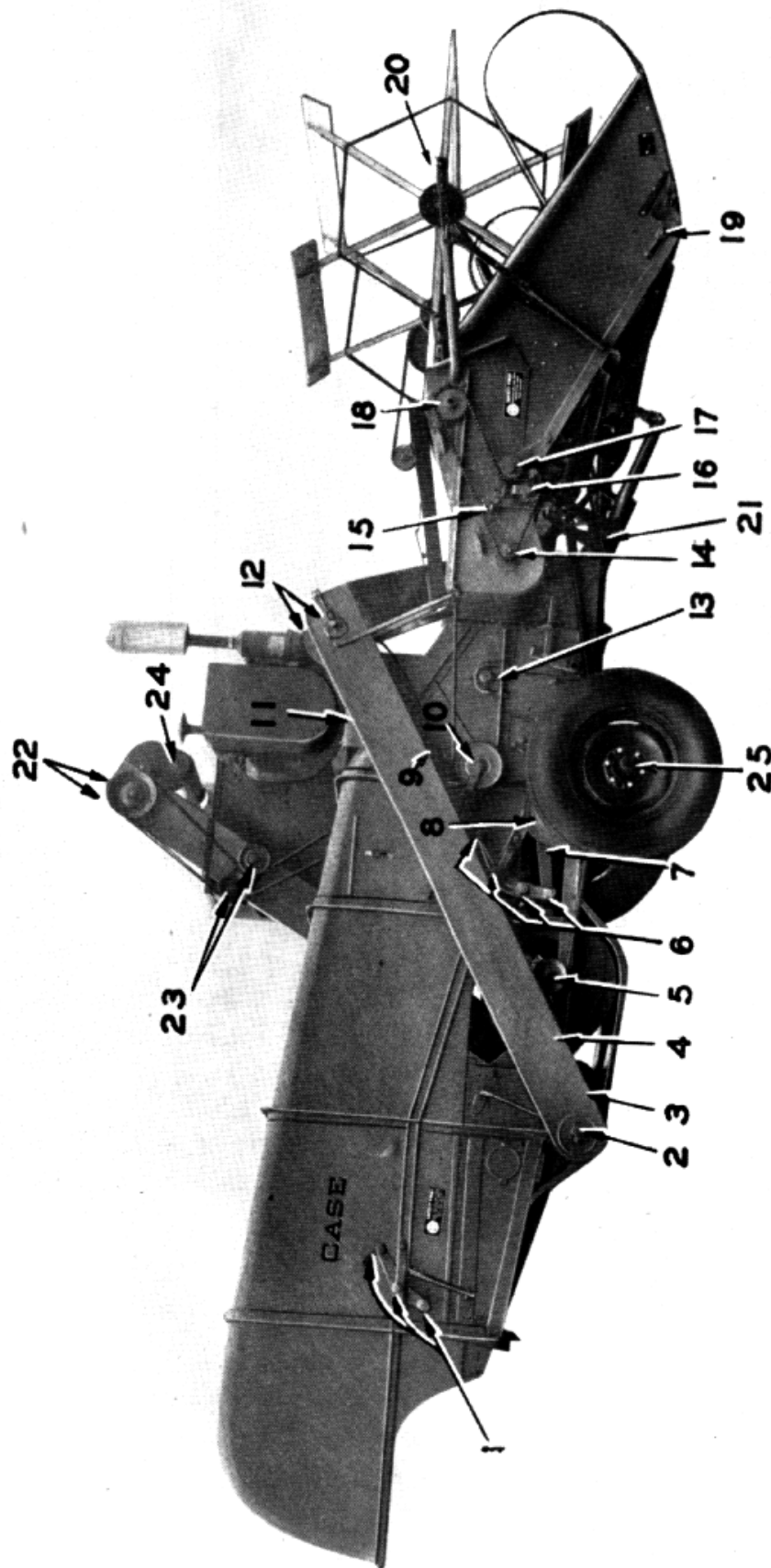


Fig. 4  
LUBRICATION



## KEY TO LUBRICATION (Fig. 4)

Location No.	Description	Type of Grease	Times to be Greased
1	Grain Pan Rocker Arm	A good grade of gun lubricant.	2 Daily
2	Tailings Elevator Auger		2 Daily
3	Grain Elevator Auger		2 Daily
4	Shoe Pitman		4 Daily
5	Fan Shaft		2 Daily
6	Straw Rack Rocker Arm		2 Daily
7	Straw Rack Pitman		4 Daily
8	Straw Rack Crankshaft		2 Daily
9	Beater Shaft		2 Daily
10	Beater-Crankshaft-Fan-Tightener		2 Daily
11	Tailings Elevator Tightener		2 Daily
12	Tailings Elevator-Upper Head		2 Daily
13	Cylinder Shaft		2 Daily
14	Header Auger		2 Daily
15	Upper Canvas Idler		4 Daily
16	Canvas Drive Idler		2 Daily
17	Lower Canvas Drive		2 Daily
18	Upper Canvas Drive		2 Daily
19	Lower Canvas Idler		4 Daily
20	Reel Shaft		2 Daily
21	Header Balance Arm		2 Daily
22	Grain Elevator Upper Head		2 Daily
23	Grain Elevator Tighteners		2 Daily
24	Grain Auger		2 Daily
25	Wheel		Yearly

All machines are dependent upon regular and proper lubrication of all moving parts to insure economical and efficient operation. Neglect leads to reduced efficiency, wear, break down and replacement of parts.

All bearings should be carefully cleaned of cinders or dirt before lubricating. Any paint found on the grease fittings or on bearing surfaces should be removed before starting the combine.

### REPLACE ALL LOST OR MISSING FITTINGS AT ONCE

Use a good grade of gun lubricant to lubricate all points provided with pressure fittings. The grease should have the specification: "pressure gun heavy", or "pressure gun medium".

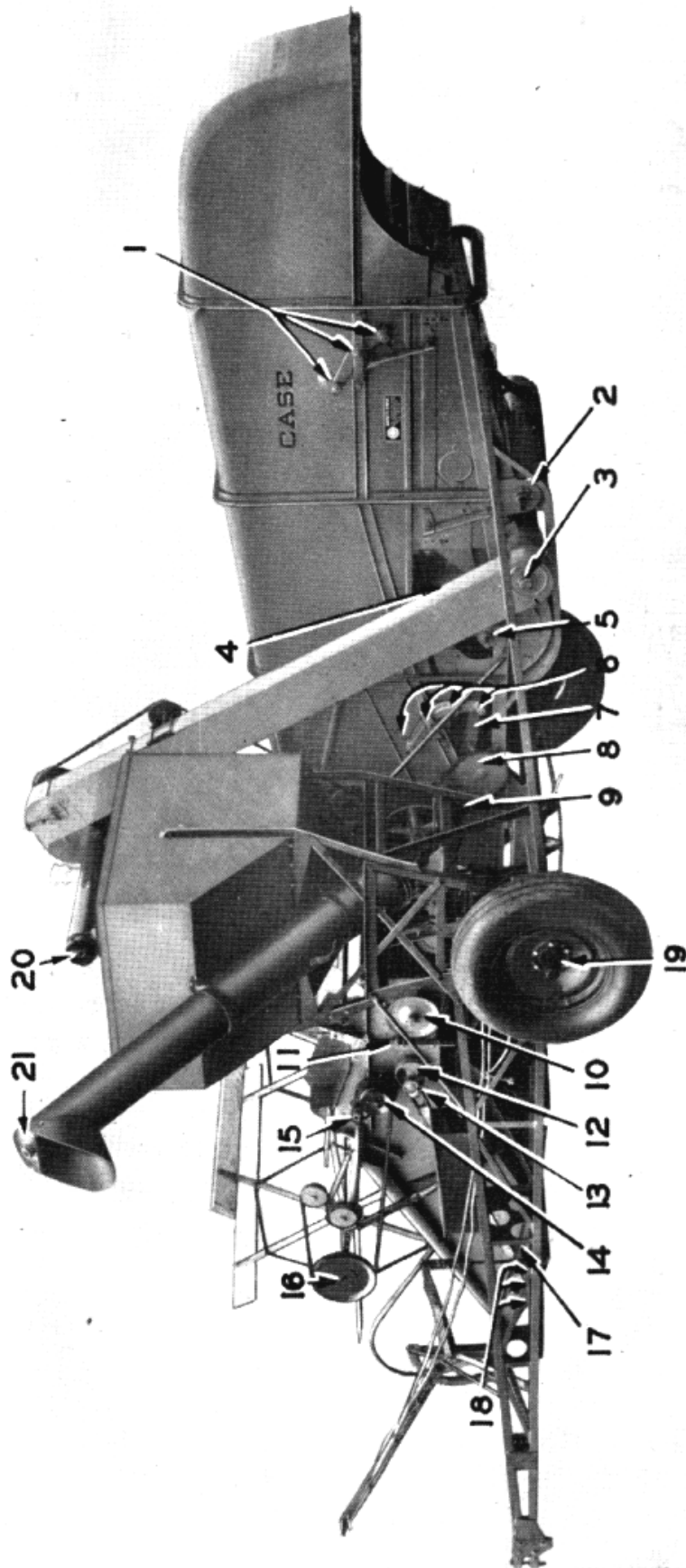


Fig. 5  
LUBRICATION

# KEY TO LUBRICATION (Fig. 5)

Location No.	Description	Type of Grease	Times to be Greased
1	Grain Pan Rocker Arm	A good grade of gun lubricant.	2 Daily
2	Tailings Auger		2 Daily
3	Grain Elevator Auger		2 Daily
4	Shoe Pitman		4 Daily
5	Fan		2 Daily
6	Straw Rack Rocker Arm		2 Daily
7	Straw Rack Pitman		4 Daily
8	Straw Rack Crank Shaft		2 Daily
9	Crankshaft Tightener		2 Daily
10	Header Auger		2 Daily
11	Upper Canvas Idler		4 Daily
12	Lower Canvas Drive		2 Daily
13	Pitman Crank		2 Daily
14	Reel Drive Pulley		2 Daily
15	Upper Canvas Drive		2 Daily
16	Reel Shaft		2 Daily
17	Lower Canvas Idler		4 Daily
18	Sickle Bell Crank Drive		4 Daily
19	Wheel		Yearly
20	Grain Auger		2 Daily
21	Discharge Auger		2 Daily

Keep the supply of lubricating oil clean and free from dust or dirt. Use clean containers and always keep them covered to prevent entry of dirt which may clog the fittings.

Care must be taken to see that all bearings are lubricated their full length. To make sure that all bearings are properly lubricated, grease should be forced into them until it begins to appear at the sides.

Lubricate all parts thoroughly but avoid excessive lubrication. Excessive lubrication will allow lubricant to drop onto belts causing slippage.

**SAFETY FIRST—Keep Clothing and Hands from Chains and Moving Parts—Stop Machine to Oil and Adjust.**

—National Safety Council.

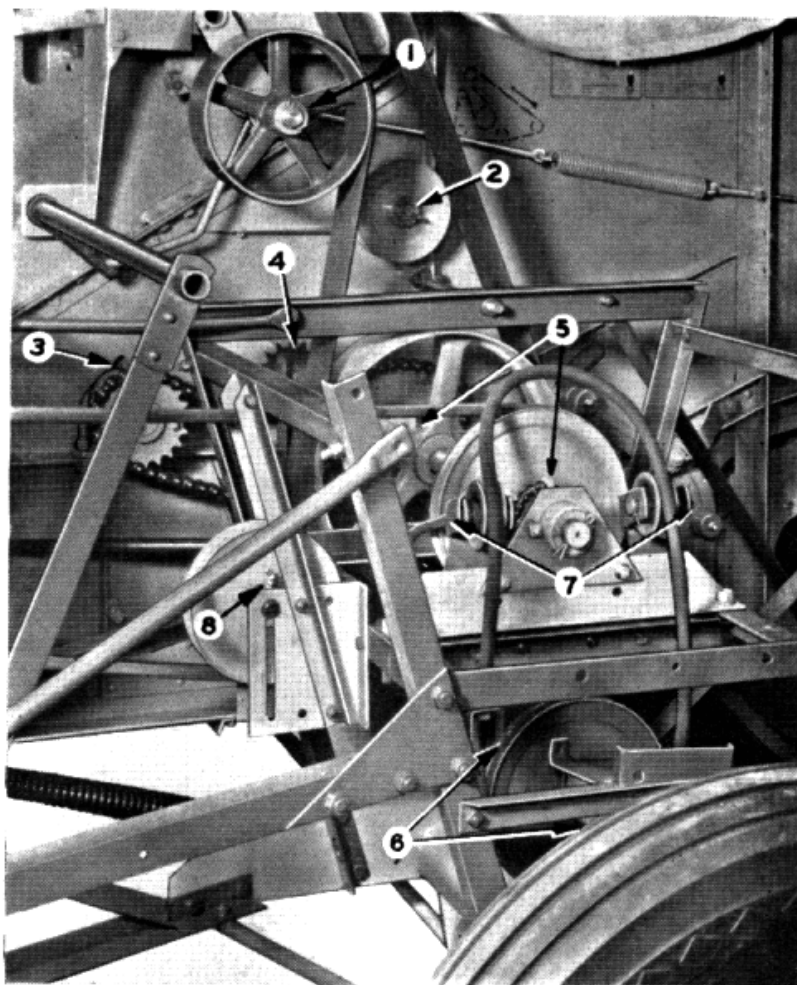


Fig. 6  
Lubrication

### KEY TO LUBRICATION (Fig. 6)

Location No.	Description	Type of Grease	Times to be Greased
1	Engine Tightener Pulley	A good grade of gun lubricant	2 Daily
2	Beater Shaft		2 Daily
3	Cylinder Shaft		2 Daily
4	Cylinder Drive Tightener		2 Daily
5	Power Cross Shaft		2 Daily
6	Grain Bin Jack Shaft		2 Daily
7	Grain Bin Idlers		2 Daily
8	Header Auger Drive Tightener		2 Daily



## SAVING THE GRAIN

It should be the aim of every operator to save as much of the grain as possible in threshing. There is not a machine built, however, that will save every kernel of grain. In threshing, as in every other mechanical operation, there is some unavoidable waste. This waste is determined by the condition of the grain and the adjustment of the machine. If the machine is properly operated and the grain is in fair condition, this loss is almost negligible.

When one discovers a machine wasting grain, he usually imagines that the quantity wasted is much greater than it really is. A farmer will often place his hand or his hat behind the straw rack and shoe in a machine and if he catches a few kernels he usually imagines that the waste is much greater than it actually is. If only a bushel of wheat is being wasted in a day it may appear to the farmer that the amount is ten times more. This amount wasted in a ten hour day would mean that about 1700 kernels were being wasted every minute and would be quite noticeable to the skeptical owner. (A bushel of wheat contains approximately one million kernels and if this amount is wasted in ten hours or 600 minutes, 1666 kernels are wasted every minute).

To get the best results from any machine, the operator must understand its operation and adjustments. A combine, like a thresher, if not properly operated will unnecessarily waste considerable grain. When a machine is wasting more grain than it should, the cause should be determined and promptly remedied.

A combine should be gauged by the quantity of grain or seed that it can properly thresh and save without undue waste, and not by the miles per hour it can travel.

As a rule, the greatest problem is to get the new combine owner to wait until his crop is completely ripe. For a long time, farmers have been cutting grain, partially ripe, with binders. They were sold on that idea by the binder manufacturers with considerable difficulty. Many an old timer of those days said in no uncertain terms that he wanted his grain to ripen on the stalk as nature intended — that cutting on the green side with a binder would ruin the quality.

Grain should stand from a week to ten days past the binder stage. It is pointed out that this extra period of stalk ripening may increase the weight of some crops as much as 10%. The seeds fill out better, weigh better and germinate better. The old timers who believed in stalk ripening "as nature intended" had the right idea.

Once the owner or operator grasps the thought that the combine is really a thresher with a cutter bar attached, and that he must wait until his grain or seed crop is dry enough to thresh, and use the "correct equipment", there is no further trouble on the moisture score.

Using correct equipment refers primarily to direct combining as compared with windrow harvesting.

Direct harvesting is advised if conditions permit, as that method saves one operation and also permits stalk ripening.

When there are green weeds, when the crop ripens or matures unevenly, when the heads will not dry out enough on the stalk, or when grasshoppers threaten the standing crop, windrow curing is recommended.

## **OPERATING SPEEDS AND OPERATING INSTRUCTIONS**

### **OPERATING SPEEDS**

The proper speeds for the various parts are important if the combine is to function at maximum efficiency and they must be maintained at all times when the machine is in the grain; that is, on power take-off machines do not throttle the tractor down when approaching a rough spot or an obstruction in the field if the combine is cutting and threshing grain. If this is done, the cylinder will drop below it's normal operating speed and if the grain is heavy, the machine may choke up.

Power Take Off Shaft	535 RPM.
Sickle Speed	400 Strokes per min.
Header Auger	618 RPM.
Cylinder Speeds	360-1080 RPM.
Beater	423 RPM.
Straw Rack and Grain Pan	230 Strokes per min.
Fan	508 RPM.
Cross Shaft	618 RPM.

As it is difficult to check these speeds while the combine is moving over the field, it has been found advisable to adjust the engine governor so that the straw rack is running about 5% above normal speed or 245 strokes per minute when the smaller size tractors are being used. With the larger tractors this should not be done as there is enough reserve power to maintain the required power take off shaft speed at all times.

Of course, such conditions do not exist where an engine is used. The engine keeps the combine at proper speeds at all times, regardless of the tractor speed.

### **POWER REQUIRED TO COMBINE**

The Power required to operate a combine depends on the condition of the grain, the lay of the land and the weather, so for these reasons there is available both a power take-off drive and an engine driven model of the A Combine.

The Model A is a large machine, the moving parts are heavier, the shafts and bearings are larger and the capacity is greater than the small combines on the market, but it does not require any more power than other 5½' or 6' combines on the market. In general, machines with the least number of working parts and of simple construction are the easiest running and this is very true of Case combines.

## COMBINE

The modern combine is a very efficient machine and when properly operated and given reasonable care, it is durable and perhaps more nearly perfect in its operation than any other machine used on a farm.

The combine not only cuts, threshes, separates and cleans the grain but puts it either into bags or a bin. All these processes take only about 30 seconds time and the machine can be operated by only one man (two when bagger is used).

The first step in the process of combining is to cut the grain, therefore the design of the cutter bar is very important. The second step is to properly feed the grain into the cylinder. The third is to loosen the kernels of grain or seed from the straw or pod. This is accomplished by means of the cylinder and concaves which may be called the threshing apparatus. The fourth step is to separate the grain from the straw which is the function of the straw rack. Finally the chaff is removed from the grain and the grain is cleaned. This is accomplished in the shoe. Thus the machine itself may be separated into five component parts:

The cutter bar.

The feeder.

The threshing apparatus (cylinder, concaves).

The separating apparatus (grates, beater, straw rack and conveyor).

The cleaning apparatus (chaffer sieve, chaffer extension, shoe sieve and fan).

### TABLE OF ACRES CUT PER HOUR

The following table shows the number of acres cut with a 6 foot machine in one hour of steady running at various speeds:

Miles per Hour	1	1-1/2	2	2-1/2	3
Acres Cut	3/4	1	1-1/2	1-7/8	2-1/8

### OVER-FEEDING

Do not crowd the machine.

- If the grain is tall, raise the header to avoid taking in more straw than is necessary.
- If grain is down, so that all the straw must be taken, shift the tractor into lower gear or take less than a full cut.
- If sieves are over loaded, increase the air blast.
- Back combine several feet before starting cut to allow machine to reach proper running speed before threshing.

## ROLLER CHAINS

You combine is driven in great part through the use of chains and belts. It is therefore very important that these parts receive the best of care at all times.

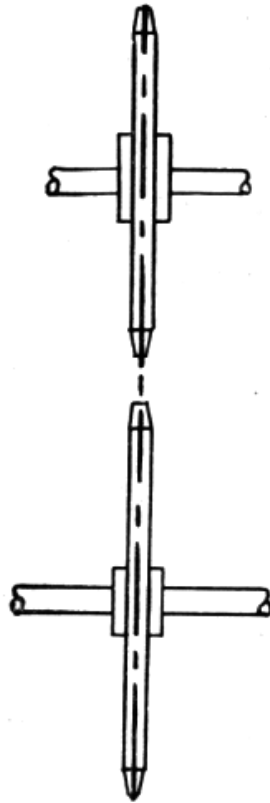


Fig. 7  
Sprocket Alignment

When installing a chain on your combine, first check the alignment of **all** sprockets in that particular drive. Sprockets out of alignment cause **undue** wear not only to the sides of the sprocket teeth, but also to the rollers of **the** chain. A chain running out of alignment may jump the sprocket, ride the **teeth** and break or whip excessively.

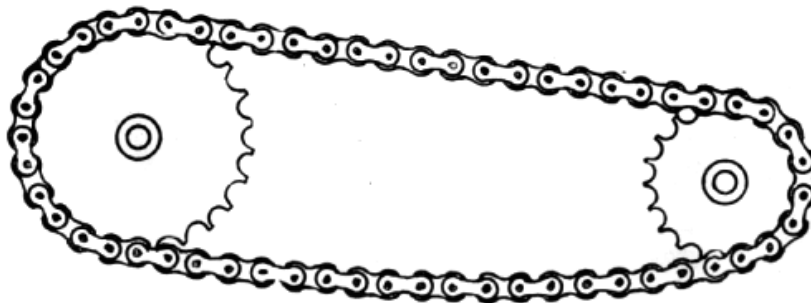


Fig. 8  
Correct Chain Tension



Roller chain drives should not have initial tension, that is, the non-driving side should not be tight. On the other hand extremely loose chains will whip excessively and cause undue wear. Generally speaking the slack side of the drive should not sag more than 2% of the shaft center distance.

Periodic examinations is insurance for longer life and better operation of the chain drive. Among the points to be checked are signs of wear, alignment of sprockets, loose sprockets, and amount of slack in the chain. If necessary the chain should be removed and cleaned.

It is recommended that new sprockets be installed with new chain. New chains should never be run on worn sprockets as the chain will be rapidly destroyed by the difference in pitch.

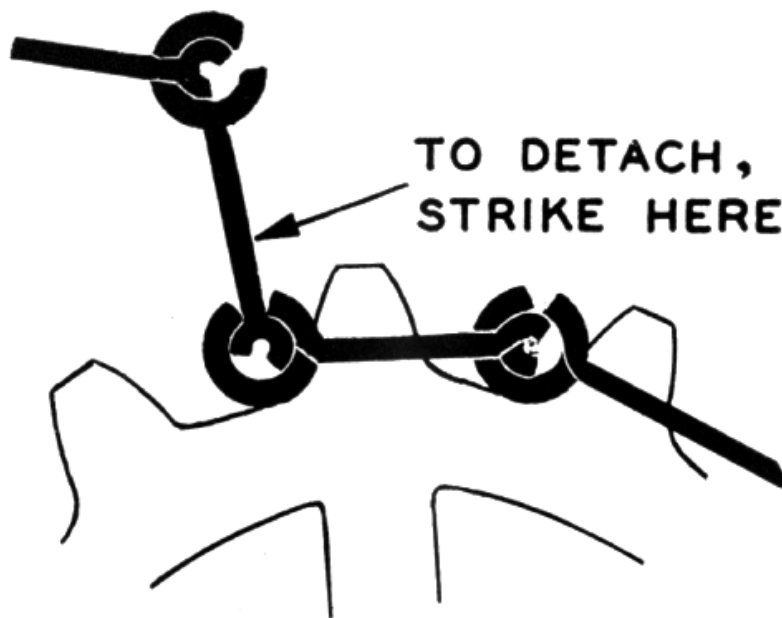


Fig. 9  
To Detach Chain

To detach open joint chains, bend to coupling position, and strike light blows at point indicated in figure 9.

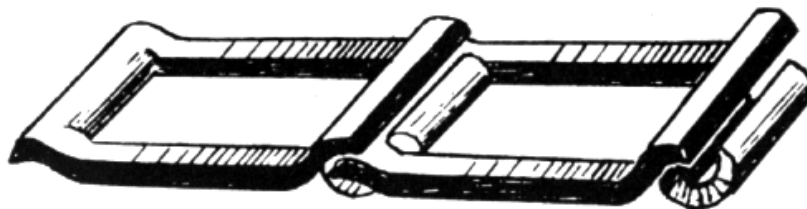


Fig. 10  
Correct Chain Assembly (not for elevator chain assembly)

## DETACHABLE OR OPEN JOINT CHAINS

When assembling detachable or open joint chains, place chain on sprocket with hooks forward and slot side out, to run in direction of travel, except otherwise indicated in the instructions and illustrations.

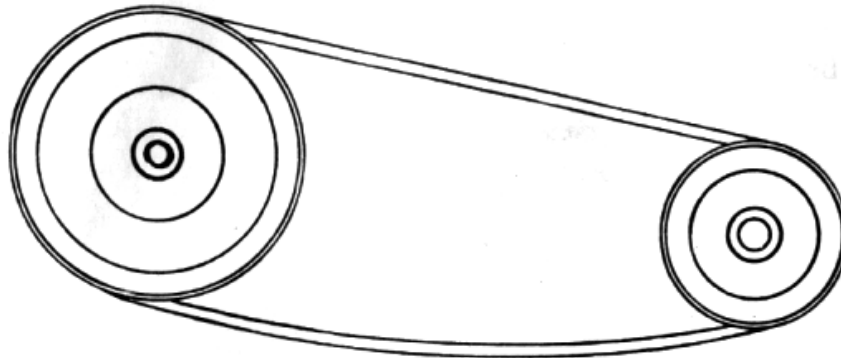


Fig. 11  
Correct Belt Tension

## BELTS

When installing a belt, slack off the tightener until the belt can be placed in the grooves of the pulley without forcing. More belts are damaged in this way than from any other cause. Under no circumstances should a new belt be roped to the pulley and pulled on by power. This treatment often starts a tear or rupture in the body of the belt which immediately or afterwards results in its destruction.

The seam side of a belt should not be placed next to the pulleys.

## BELT TENSION

After the belt is installed, tighten the takeup until the belt is fairly snug. Check your pulley alignment and see that the drive is clear and free. Start the drive and run for a short time at full speed. Stop the machine and re-adjust tightener until only a slight bow appears in the slack side. Vertical drives, and drives carrying pulsating loads, must be operated somewhat tighter than others.

All belts, and especially those of synthetic material should have a "breaking in" period. That is, they should first be run without load, until their flexibility and initial stretch is established. In so doing a longer life for the belt is assured. If a machine is allowed to stand idle for any length of time this process should be repeated. After harvest season remove the belts from the machine, clean and store away. At the start of a new season, each belt should be treated as a new belt, and again be broken in before subjecting it to a heavy load.

If a drive should become covered with oil, wipe both sheaves and belts clean with a gasoline soaked cloth.

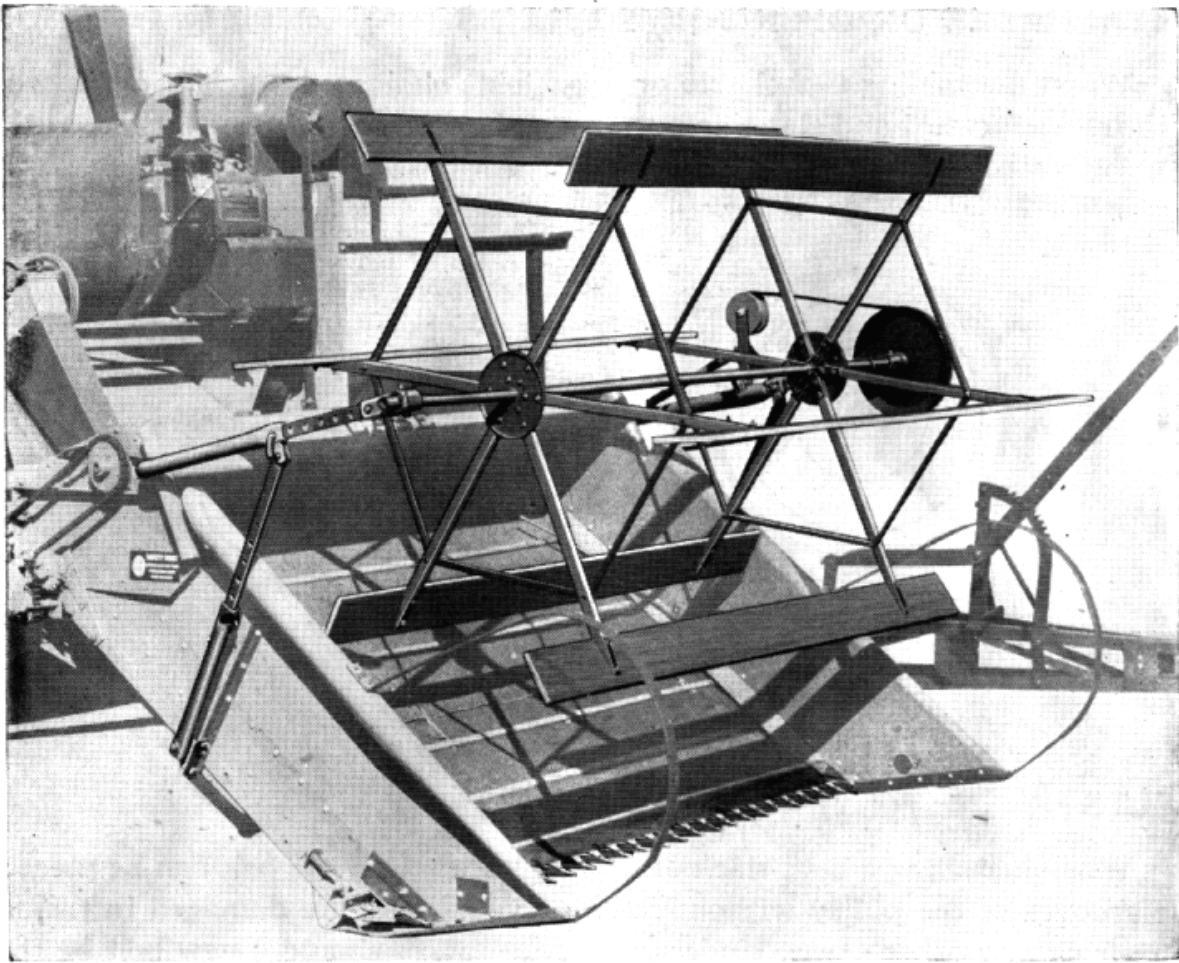


Fig. 12  
Cutting Section

## REEL OPERATING ADJUSTMENTS

The reel has two very important jobs to do, bring the grain to the sickle and to sweep it back onto the platform after it has been cut.

The reel must be set to best suit the condition of field and crop. To meet various conditions the reel is designed so that it may be adjusted forwards or back, up or down. For grain that is standing well, the reel should be set ahead of the cutter bar and just low enough to bat the lowest heads onto the canvas. A heavy crop that has gone down can usually be handled with the reel set just over the cutter bar and quite low. The reel then tends to sweep the grain back onto the platform canvas.

Setting the reel too low and too far back on the platform will sometimes cause straw to be carried around over the top of the reel.

Short crops are best handled by setting the reel as close to the cutter bar as possible.

The reel may be used with 3, 4, or 6 bats as desired. Holes are provided in the reel hubs to allow for the various arrangements of reel bats.

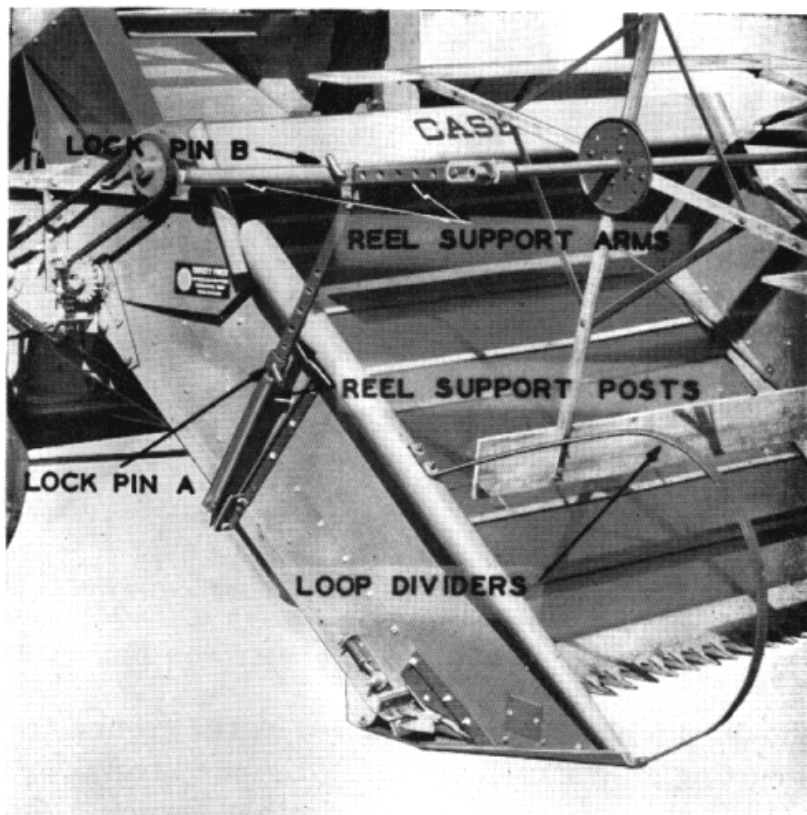


Fig. 13

## REEL SETTING ADJUSTMENTS

To raise or lower the reel remove right and left hand **lock Pins "A"** that connect the upper and lower sections of the **reel support posts**. Adjust the reel up or down as may be required and replace lock pins which are secured with cotter pins.

To level the reel follow the same procedure as used to raise and lower same. It is important that the reel be level at all times to insure an even feed of material onto the platform canvas.

To adjust the reel forward and back, remove right and left hand **lock pins "B"** that connect the two sections of the **reel support arms**, adjust reel forward or back as required, and replace pins.

The reel bats can be assembled on the beveled or straight side of the arms. The reel shaft is constructed so that the pulley can be attached to either end so the proper pitch of the bats can be utilized by turning the reel end for end when bats are changed.

## DIVIDER LOOPS

When combining crops that are down and tangled, or crops that are leaning, it is advisable to use the **loop dividers**. These dividers ride over a down crop enabling the cutter bar to make a clean cut and prevent lodging on the header side sheets. Divider loops are provided for both right and left sides.



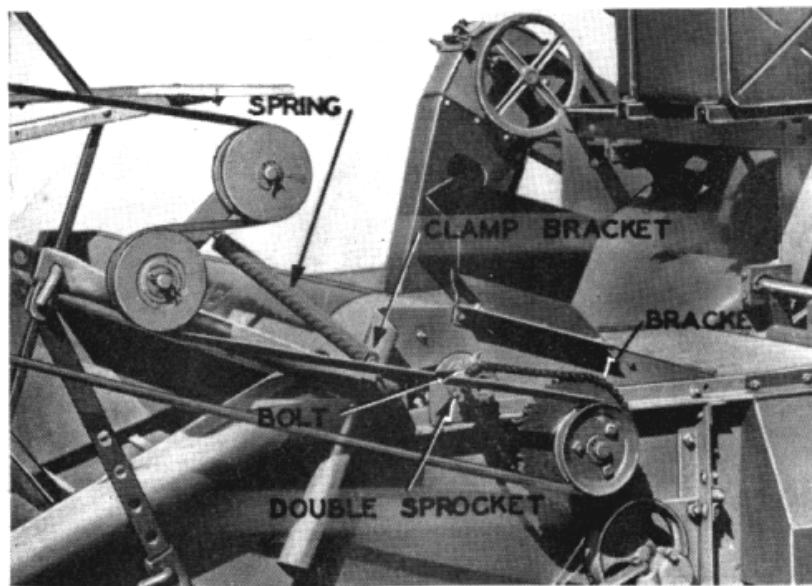


Fig. 14

## REEL SPEEDS

The reel should run about the same speed as the ground travel of the machine, so when cutting a light crop with a fast ground travel, it is advisable to use the larger (15 Tooth) sprocket on the **double sprocket** assembly driving the reel approximately 35 RPM. In a heavier crop with a slower ground travel, use the smaller (13 Tooth) sprocket which will drive the reel approximately 30 RPM.

To change reel speeds loosen bolts in slotted adjusting **bracket**, releasing the tension on chain. Remove **bolt** from **double sprocket** assembly and reverse on shaft. Replace bolt in sprocket, re-adjust bracket to provide correct chain tension, and re-tighten bolts in bracket.

The correct belt tension is maintained for all reel adjustments by the **spring** on the reel tightener. The spring should be adjusted with just sufficient tension to drive the reel, by adjusting the **clamp bracket** on reel arm. When the reel is adjusted in operation, the spring tension should be adjusted also to prevent excessive pull on the belt and spring.

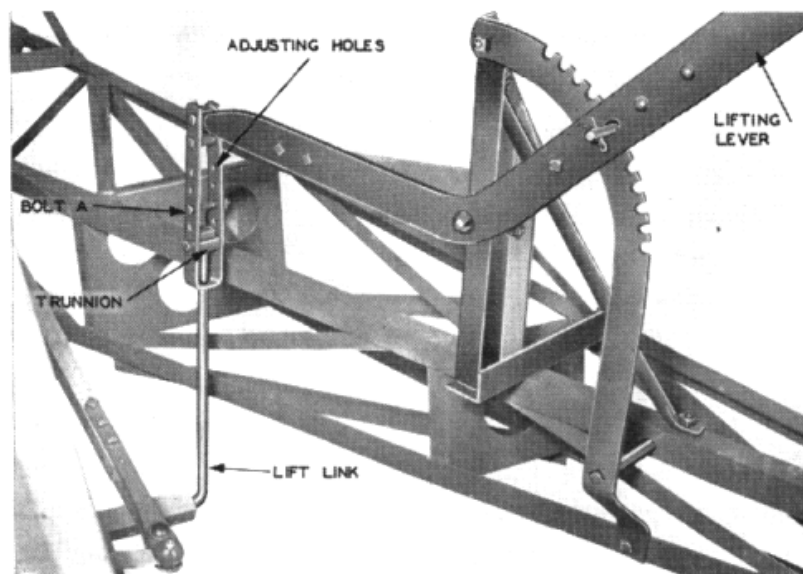


Fig. 15

## HEADER PLATFORM LIFT

The platform cutting range is from  $\frac{3}{4}$ " to 26".

The **lifting lever** Fig. 16 can be lengthened or shortened for the convenience of the operator. A good job of combining is done only when the platform is raised or lowered to meet crop conditions.

If a rigid or non-floating connection is desired, locate **bolt "A"** in hole directly above that hole used to connect **trunnion**. The header **lift link** passes through hole in trunnion and is secured with a nut, which in the position described, is held rigid by **bolt "A"** and will not allow the header to float.

A floating header is sometimes desired, as in windrowing, or when combining in conditions which require cutting close to the ground. This floating action can be achieved by increasing the spacing between **bolt "A"** and that bolt used to secure **trunnion** in one of the series of **adjusting holes**. This increased spacing will give nut on the header **lift link**, space in which to slide, allowing header to float up and down.

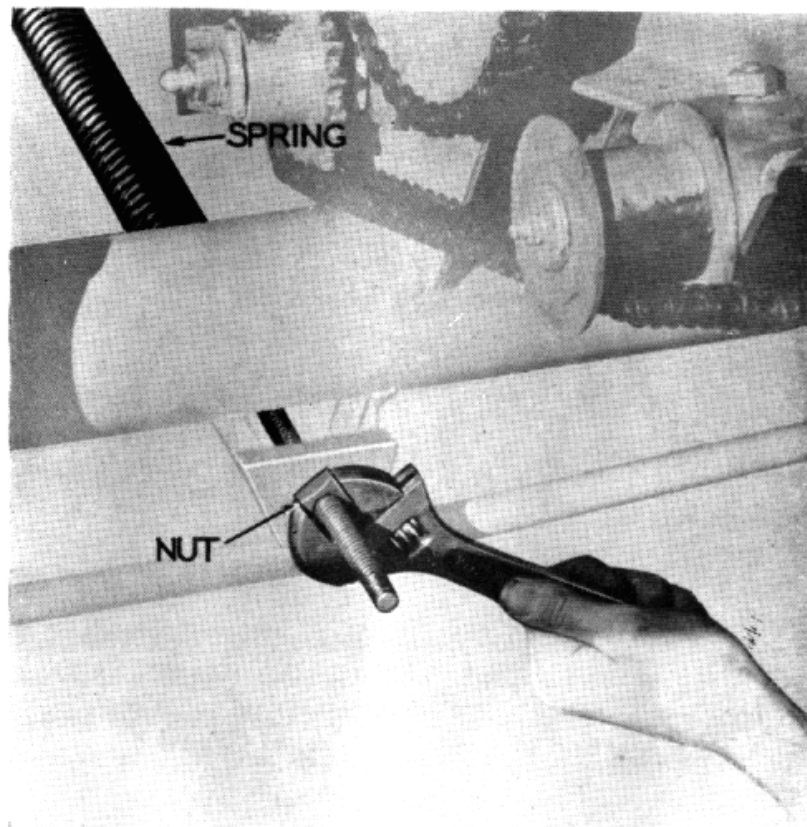


Fig. 17

## HEADER SPRING ADJUSTMENT

After adjustment for raising the header has been made, the platform **balancing springs** should be adjusted by tightening **nuts** on the tension rods, so that the platform raises slightly easier than it lowers.

**CAUTION:** Before adjusting lever, be sure tension has been released on platform balancing springs.

## CUTTER BAR

The cutter bar of a combine, in principle, is nothing more than a multiple set of shears. For shears to cut properly they must be sharp; likewise the sections and guard plates of a combine cutter bar must be sharp and have a shear contact.

The cutting edges of the ledger plates must line up the full length of the platform.

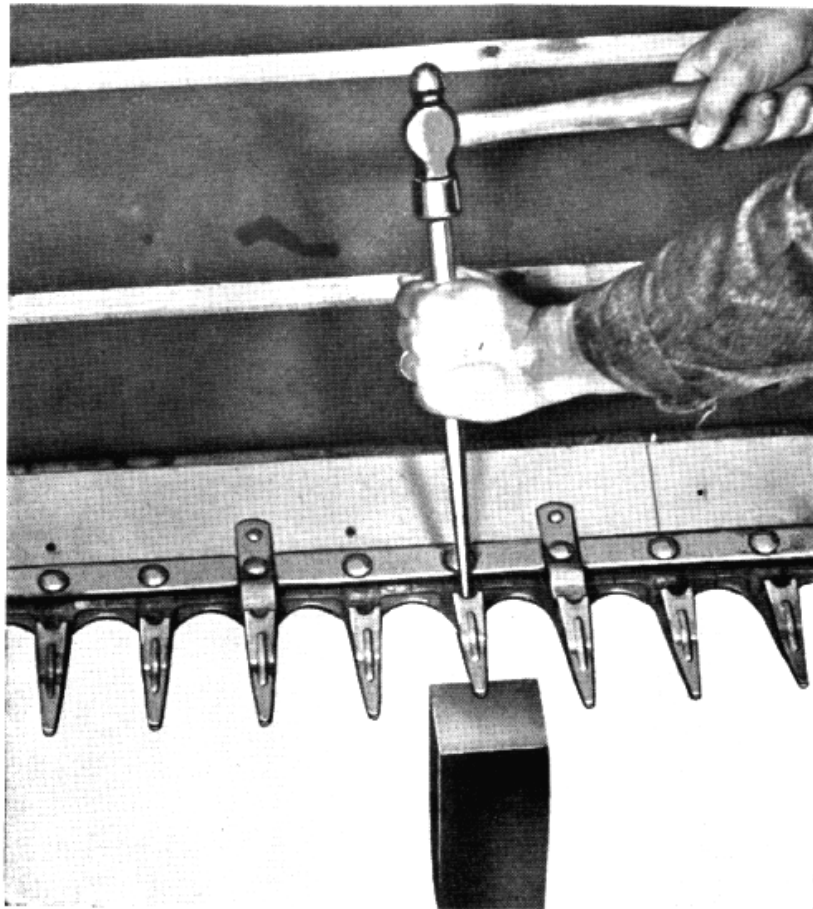


Fig. 17  
Method of Lowering Heel of Guard

## SICKLE ADJUSTMENT

If for some reason the sickle does not lie flat on the ledger plate, never try to force the section down by pounding the hold down clip. First, take the sickle out of the header and line up the guards; then bend the hold down clip so the sickle will be reasonably tight, put the sickle back in and if the hold down clip is too tight, pry the holder up with a screw driver. Oil the sickle and ledger plates often; be sure the sickle works freely.

## SICKLE LUBRICATION

When the grain is being headed and cutter bar is carried some distance from the ground, a liberal lubrication with used engine oil at frequent intervals is permissible but in sandy soil conditions where cutter bar must operate close to the ground, it is better to use no oil except a small amount at the sickle clips.

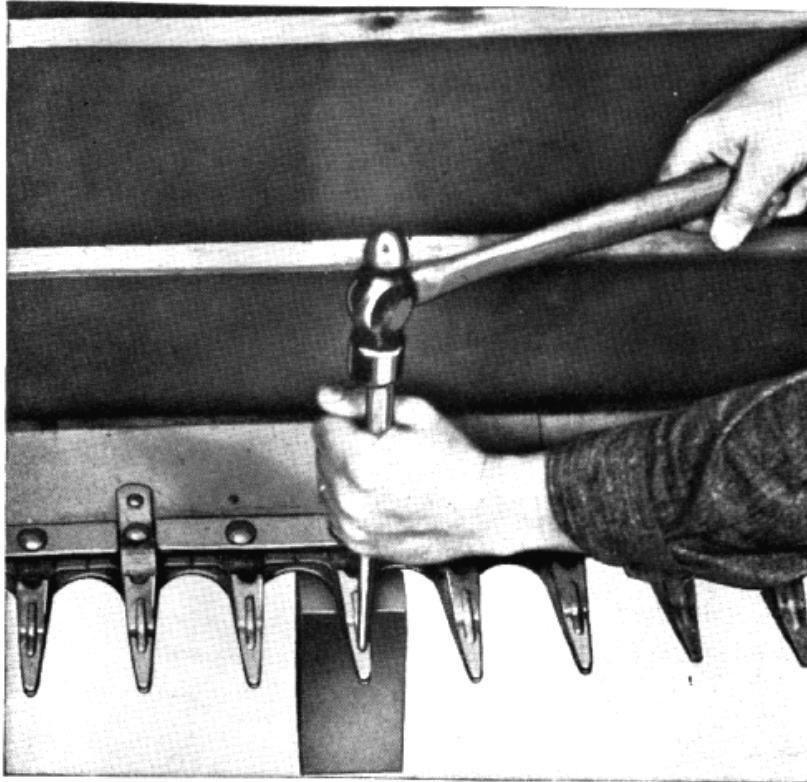


Fig. 18  
Method of Raising Heel of Guard

Worn or broken sickle sections and guard plates should be replaced promptly. Never run cutter bar closer to the ground than is necessary to get all of the crop. Cutting lower than necessary increases the material going through the machine, thus making separating of the grain from the straw more difficult.

**REGARDLESS OF THE CARE USED in the design and construction of farm equipment, there are many points that cannot be completely safeguarded without interfering with accessibility and efficient operation.**

*—National Safety Council.*



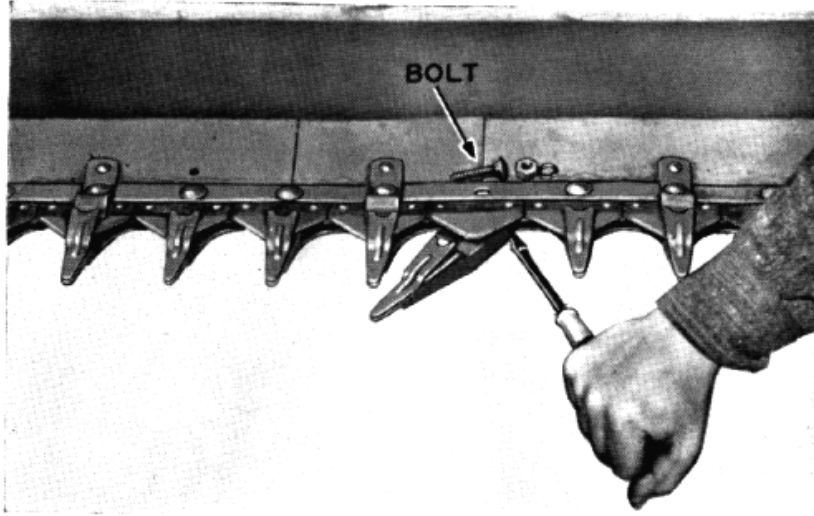


Fig. 19  
Removing Sickle Guard

## REMOVING SICKLE GUARD

To change sickle guards remove **bolt** from guard, and loosen next two **bolts** on either side of guard to be changed. Insert a screw driver between **re-taining** clips and pry downward. The sickle guard can thus be slipped from **position**.

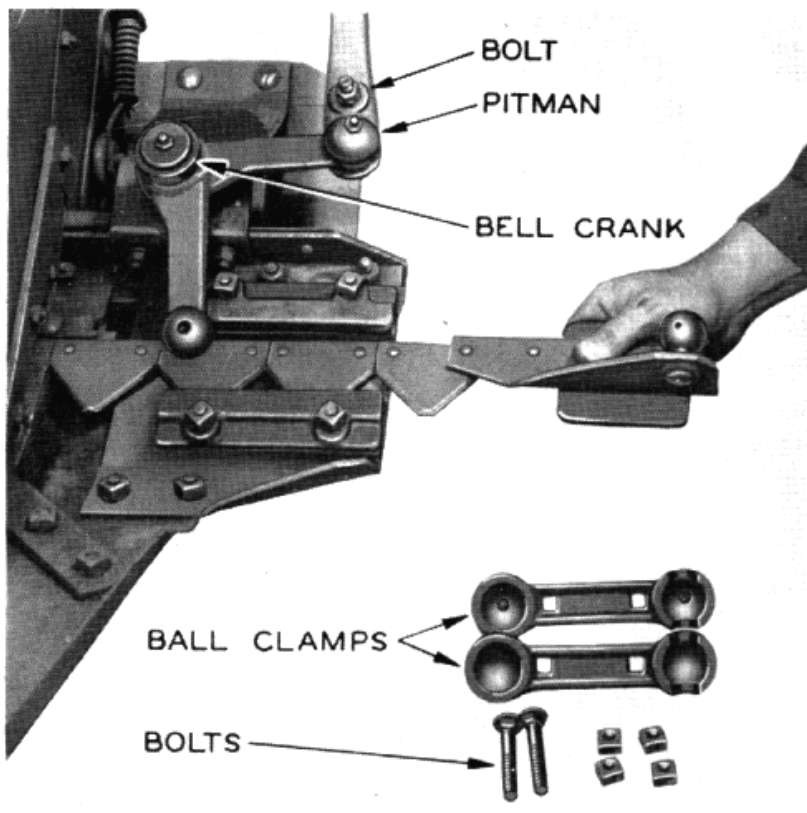


Fig. 20  
Removing Sickle

## REMOVING SICKLE

The sickle can be removed by disconnecting the **ball clamps** Fig. 20 from the knife head and pulling the sickle out under the hitch.

The **sickle drive bell crank** has been carefully inspected and "run in" at the factory. However, it is advisable to recheck this point frequently for loose bolts, and remove dirt or cinders that might have accumulated during use.

## SICKLE DRIVE ADJUSTMENT

When adjusting the **sickle ball clamps** and **pitman** do not put pressure on ball head (if links are clamped too tightly they will cause a knock). **Make** sure the **bolts** are locked with the double nuts.

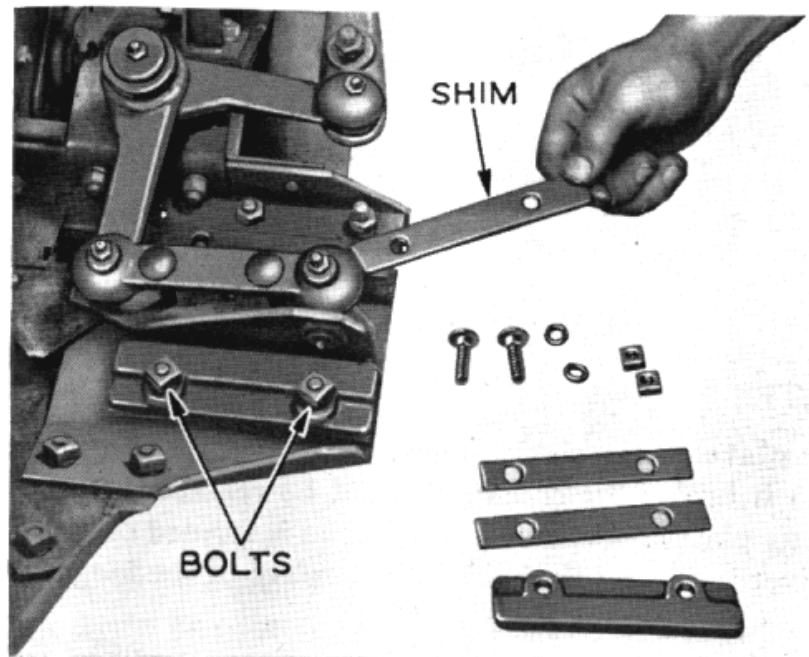


Fig. 21

Adjusting Sickle Bar

**Shims** are provided under the sickle guides so that the sickle may be adjusted to run evenly and quietly at all times. To make this adjustment, remove **bolts** from guides, remove or add **shims** as required for proper adjustment and replace guide and bolts.

When first starting the machine, these parts will no doubt be a little stiff, so it is recommended that after the first day's run, they be thoroughly checked for slack, especially in the sickle guides and bell crank connections. **Adjustments** should be made accordingly.

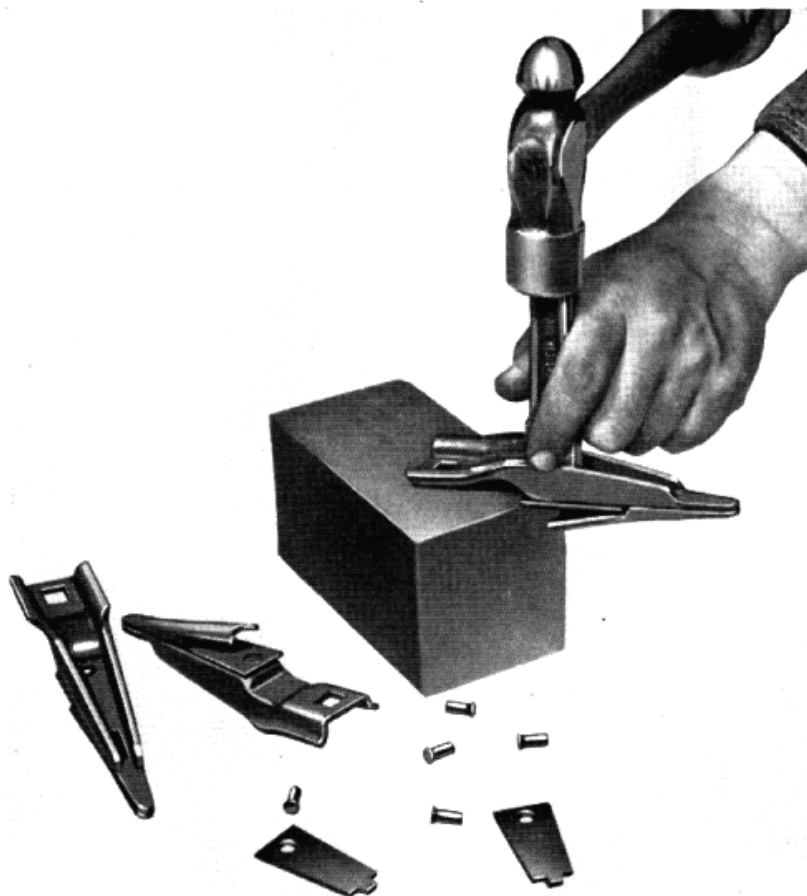


Fig. 22  
Riveting Ledger Plates

## LEDGER PLATES

The **ledger plate** on the sickle guard provides shear contact with the sickle bar sections and if broken or cracked should be replaced promptly. When installing new ledger plates make sure a good head is formed on the rivet, and that the top of the rivet is ground flush with the surface of the ledger plate.

## SICKLE DRIVES

The sickle is driven from the left hand end of the header lower canvas drive roller shaft. This drive requires very little attention except to keep the balls and clamps snugly tight and properly oiled.

Correct immediately any looseness that may develop in pitman drive parts. A little looseness can in a short time increase to the point where excessive wear and breakage occurs.

## SICKLE REGISTER ADJUSTMENT

If the sickle does not have proper register, the cut is incomplete on one stroke and excessive on the other, resulting in a poor job of cutting and frequent clogging of the sickle. The sickle is in proper register when the sections pass equal distance through the adjacent guards at each end of the pitman stroke.

A sickle out of adjustment may mean the header hinge brackets are badly worn, or that the holes in the sickle pitman are not properly located.

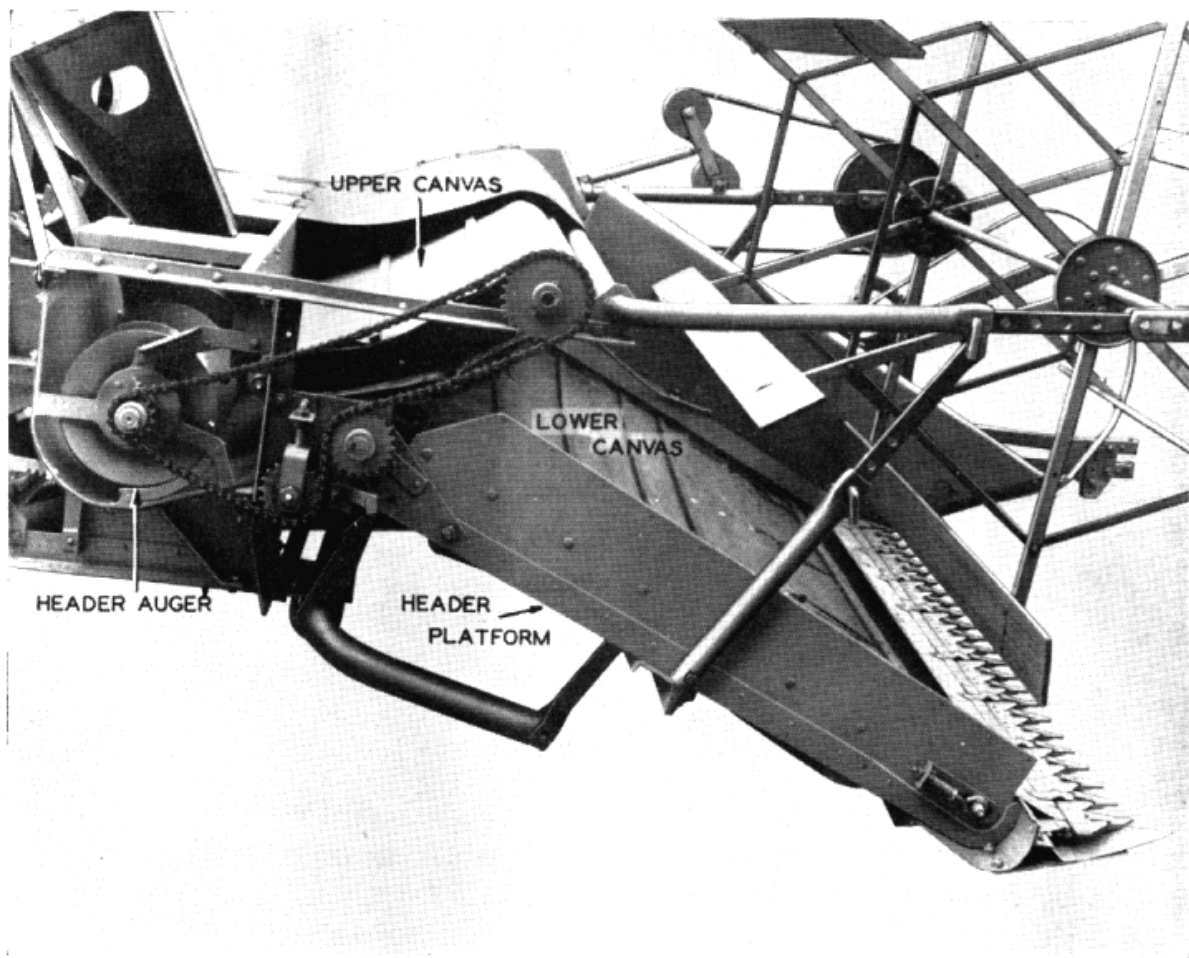


Fig. 23  
Feeding Section

## FEEDER

From our long experience of over a century in building threshing machines we know that a feeder is necessary in front of the cylinder, so the Model "A" Combine is equipped with a feeder auger. There are several reasons for using such a feeder. The narrow cylinder provides for more rigid construction and better operating conditions, and more even feeding is obtainable in both light and heavy crops. The narrow, rigid cylinder construction is a decided advantage in handling windrowed crops.

The feeding auger gathers the grain from both sides and delivers it to the center where the beater wings comb the grain and feed it into the cylinder.

There are two canvases on the header whose purpose is to carry the grain to the feeder auger. These canvases are especially treated to give longer life. The wooden slats are flexible and are fastened to the canvas by wire staples which are staggered to prevent straw from lodging under them.

The lower canvas conveys the unthreshed grain to the feeder, while the upper canvas serves as a helper or stripper for the lower canvas.

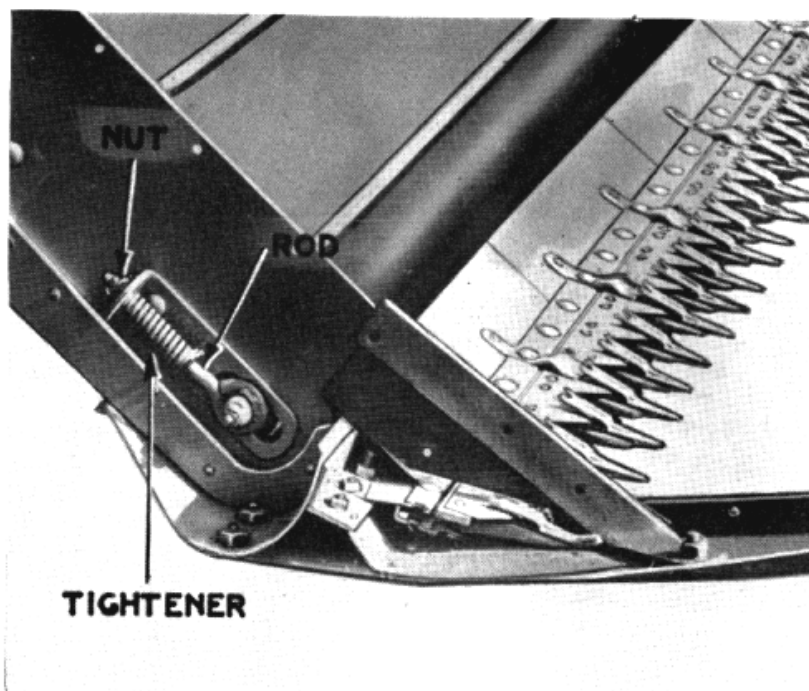


Fig. 24

Tension on the lower platform canvas is maintained by spring **tighteners** at each end of idler roller at lower end of platform. Tension may be increased or decreased by adjusting **nut** on **tension rod**. When tightening canvas be sure that both sides are adjusted evenly. An uneven adjustment will cause canvas to run at an angle, and permit grain to accumulate inside of canvas.

Tension on canvas should be released when machine is not in use.

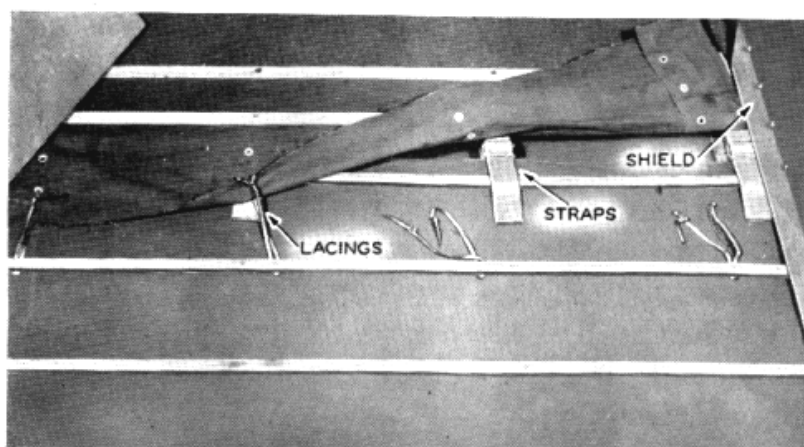


Fig. 25

The ends of the canvases are fastened together with buckles and **straps**. Tightening of the canvas is also accomplished through use of these straps. Rawhide **lacings** are used to secure end of canvas covering the buckles.

Be sure that the edges of canvases are not rubbing at any point in their travel. The **shields** on each side of the header should be provided with just enough clearance for the canvas slats. If shields are bent excessively, grain will be permitted to drop below the canvas.



Stop combine immediately if canvases are not operating, and check for alignment, tension, and material lodged between rollers.

Frayed or torn canvases should be serviced at once.

Broken or lost slats should be replaced immediately to insure an even flow of material to the header auger.

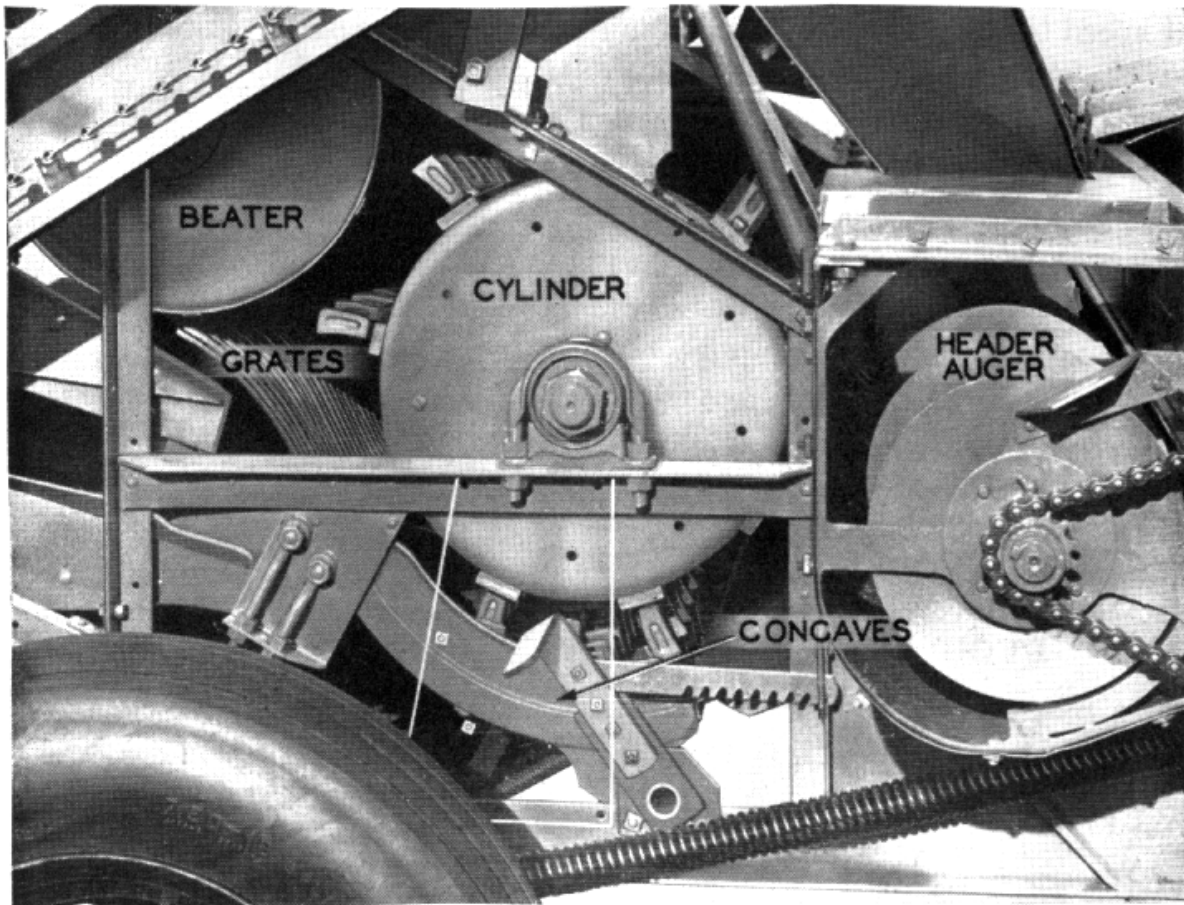


Fig. 26  
Threshing Section

## THRESHING SECTION

The next important process of combining is to loosen the kernels of grain from the straw or pods. This is the function of the cylinder and concaves, and is accomplished by the cylinder teeth driving the grain against the concave teeth with sufficient impact to loosen or remove the kernels from the heads or pods. (In a rub bar combine, threshing is accomplished by the cylinder rubbing the grain against the concave bars.) The first grain knocked loose by the cylinder, falls through the grate fingers directly behind the concaves. The straw and the balance of the grain passes over the grates and is deflected by the beater behind the cylinder onto the front section of the straw rack.

The beater slows the travel of the straw, then spreads and deflects it down onto the rack, materially aiding separation. A check flap back of the beater stops flying kernels from being thrown out of the rear of the machine.

## CYLINDER SPEEDS

The efficiency of threshing depends largely on the cylinder speed. The proper speed is determined by the condition of the grain which varies during the day due to changing humidity. Damp grain requires a higher speed than grain that is properly dried. If cylinder speed is too great, the grain may be cracked, and straw broken up too much, causing an overload on the cleaning shoe. Use just enough speed to do a good job of threshing. If grain is being cracked, reduce speed to where cracking is eliminated, then adjust concaves to get sufficient rubbing action with cylinder to remove grain from heads.

Coarse grains do not require as high a cylinder speed as fine grains and small seeds.

The "A" Combine is shipped with (2) sprockets, (21 Tooth) and (36 Tooth) interchangeable between the cross shaft and cylinder shaft with which it is possible to secure a cylinder speed of 360 R. P. M. and 1080 R. P. M.

Special sprockets (25-44-48-52 Tooth) are provided with various attachments and may be ordered extra. These sprockets will provide a variation of cylinder speeds ranging from 247 R. P. M. to 1300 R. P. M.

### REGULAR CYLINDER DRIVE COMBINATIONS

Sprockets	Cross Shaft	Cylinder Sprocket	Cylinder Speed
21 Tooth	36 T	21 T	1080 R.P.M.
36 Tooth	21 T	36 T	360 R.P.M.

### SPECIAL CYLINDER DRIVE COMBINATIONS

Sprockets	Cross Shaft	Cylinder Sprocket	Cylinder Speed
25 Tooth	44 T	21 T	1300 R.P.M.
	36 T	25 T	900 R.P.M.
	44 T	36 T	755 R.P.M.
	25 T	21 T	735 R.P.M.
44 Tooth	25 T	25 T	618 R.P.M.
	21 T	25 T	520 R.P.M.
	36 T	44 T	505 R.P.M.
48 Tooth	25 T	36 T	490 R.P.M.
	25 T	44 T	350 R.P.M.
	21 T	44 T	295 R.P.M.
52 Tooth	21 T	48 T	270 R.P.M.
	21 T	52 T	247 R.P.M.

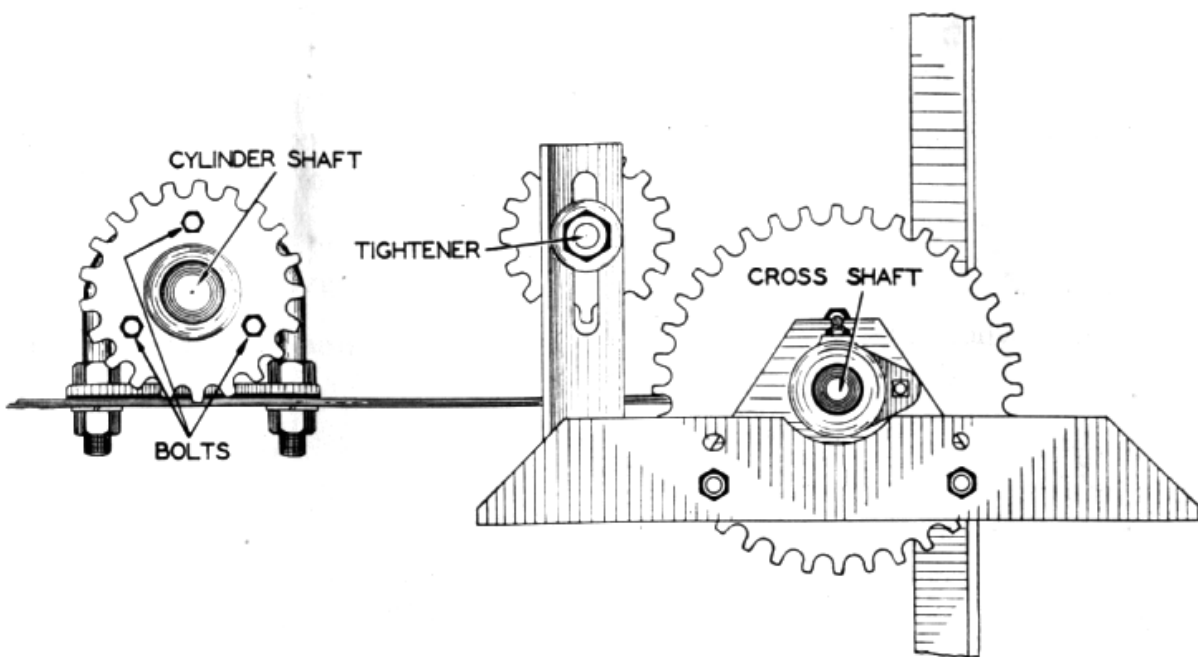


Fig. 27

## CHANGING SPEEDS

To change the cylinder speed, remove chain from drive. Remove hex nut and (18 Tooth) crank shaft drive sprocket from end of cross shaft. Remove three **bolts** from either or both sprockets on the **cross shaft** or **cylinder shaft**. Remove sprockets and replace with others needed to secure speed combination shown on page 32; replace bolts and adjust chain accordingly.

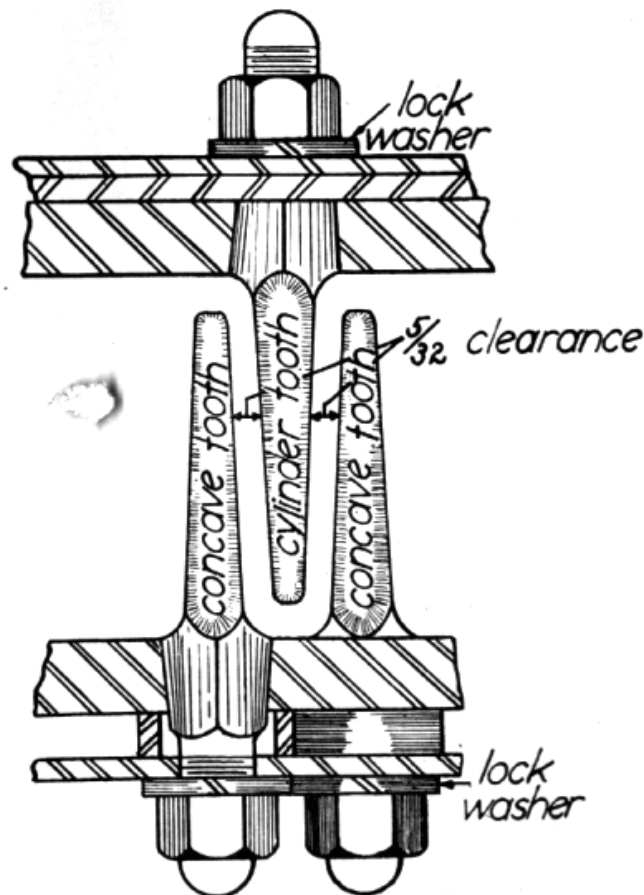


Fig. 28  
Spacing of Teeth

## CYLINDER AND CONCAVE TEETH

The teeth used in the cylinder and concaves are drop forged from special selected steel and carefully tempered. The point is hardened to resist the wear that this part of the tooth is subjected to, while the body of the tooth is tough, thus breakage is almost entirely eliminated.

The cylinder teeth are interchangeable with the concave teeth.

**Be Sure Nuts On Cylinder Teeth Are Tightened Securely. Check Often.**

All cylinders are carefully balanced before being installed in machines, so it is important when assembling new teeth in a cylinder bar to add the same number of new teeth to the bar on the opposite side.

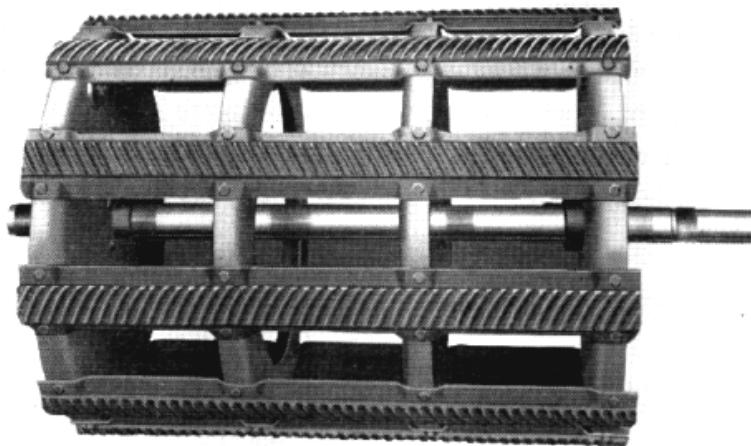
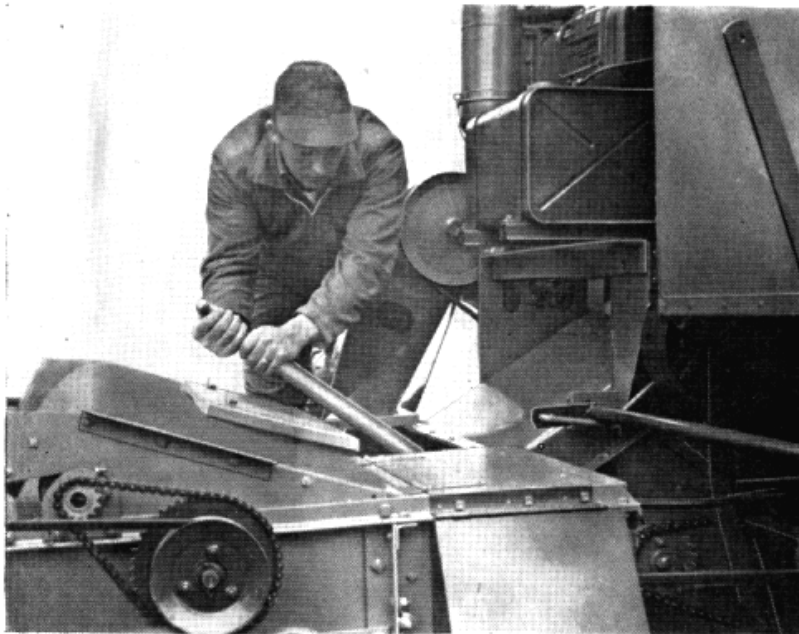


Fig. 29  
Rub Bar Cylinder

## CYLINDER RUB BARS

The "A" rub bar cylinder is equipped with 10 rub bars, assembled so the grooves in adjacent bars run in opposite directions. When changing bars make sure that one bar has grooves pointing to the right and the next bar has grooves pointing to the left and so on around the cylinder. This arrangement is important to secure proper rubbing action against concaves.

**Be Sure Cylinder Rub Bar Bolts Are Tightened Securely. Check Often.**



**Fig. 30**  
**Straightening Cylinder Teeth**

## **STRAIGHTENING CYLINDER TEETH**

Cylinder and concave teeth must be in perfect mesh to do a thorough job of threshing and prevent clogging. In fields where rocks are numerous, extreme care should be taken to prevent them from getting onto the platform canvas, and into the cylinder where they may bend and perhaps break the cylinder teeth.

Bent or broken cylinder teeth must be straightened or replaced at once. Open hinged door in header auger trough directly in front of cylinder, and through use of a pipe or other lever device placed over the tooth, spring back into position. To make a final check for straightening, turn cylinder over slowly, and observe spacing of cylinder teeth as they pass between the concave teeth.

The rub bar cylinder may be straightened in a similar fashion by placing a long blunt punch on the back side of bar and striking punch with a heavy hammer.

Cylinder teeth or cylinder rub bars may also be straightened or replaced, working from the bottom of the machine after the concave bars have been removed (see removing of concaves page 38).

## **CLEANING CYLINDER (RUB BAR)**

In localities where there is considerable moisture, dirt and chaff may tend to adhere to the inner side of the cylinder bars. This condition will "throw" the cylinder out of balance, causing the machine to vibrate considerably and perhaps lead to unnecessary replacements.

To overcome this condition the cylinder should be cleaned at least once a day. With the combine empty, start and stop the cylinder several times, using a quick pickup. This procedure should allow all dirt and chaff to drop away from the cylinder bars.



It may be necessary in extreme cases, to remove the access door by the cylinder and through use of a stick or other object, scrape the dirt from the bars.

## CYLINDER AND CONCAVE SPACING

It is impossible to convey by instructions a definite setting between the cylinder and concaves. The only way this can be accomplished is by adjustment in the field to meet actual harvesting conditions.

If all seeds are not being threshed out, one of the following adjustments should be made:

- a Decrease the cylinder and concave spacing.
- b Add more teeth or bars to the concaves.
- c Increase the cylinder speed.

If seeds are being cracked, reverse the above adjustments given for unthreshed seeds.

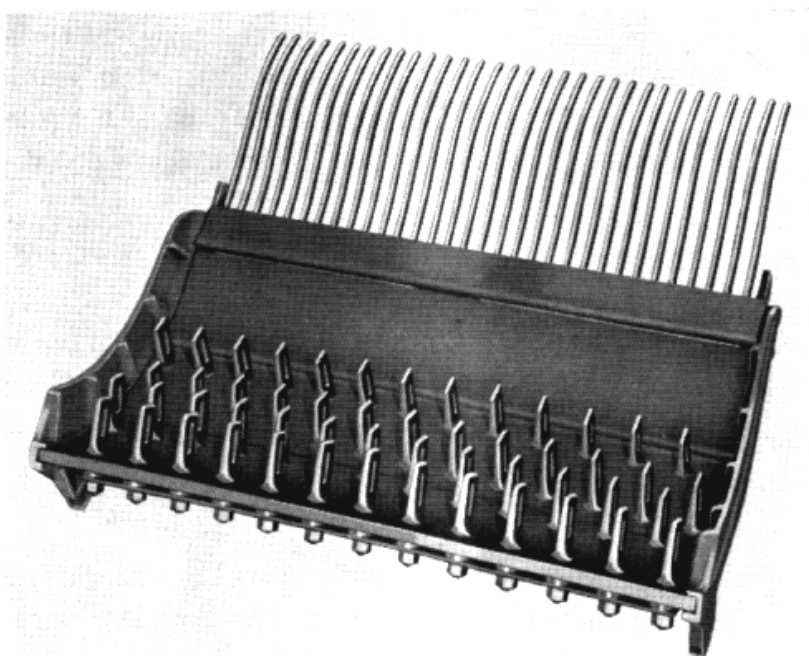
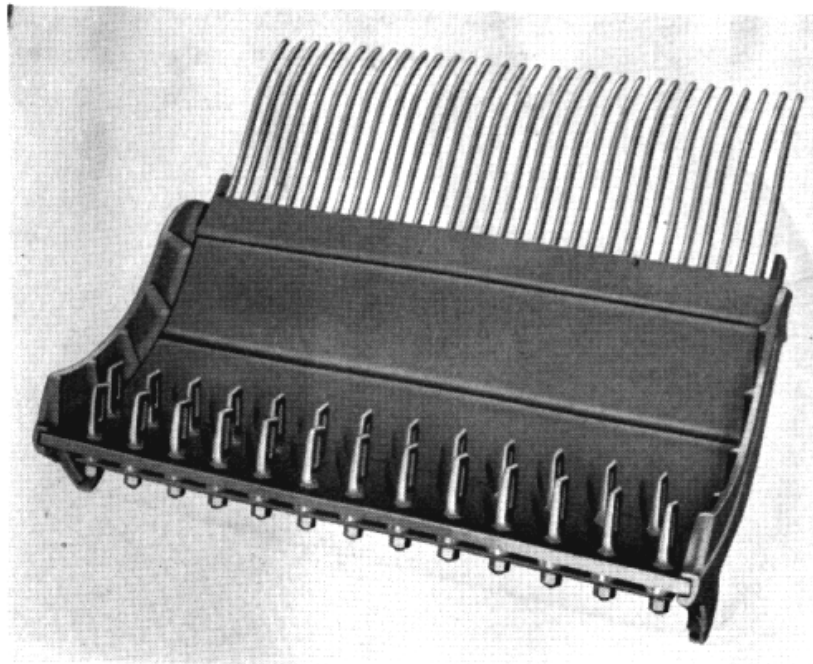


Fig. 31  
Four Rows of Concave Teeth

## CONCAVE BARS (SPIKE TOOTH)

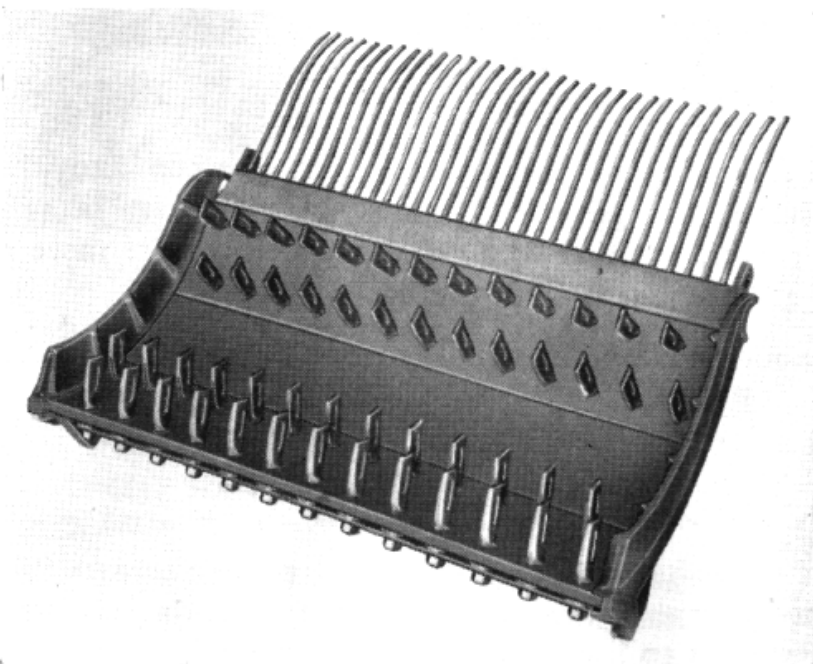
The "A" Combine is shipped with two concave bars with spike teeth, and one blank concave, assembled. An extra concave bar with teeth may be ordered if threshing difficulties arise which warrant the need of additional threshing area (alfalfa, clover and other light seeds).



**Fig. 32**  
**Two Rows of Concave Teeth**

A second blank concave is packed with the machine. This blank may be used in place of a spike tooth concave, greatly reducing the threshing area.

Use just enough concave teeth to do a good job of threshing with a minimum of cracking.



**Fig. 33**  
**Blank Concave In Center**

The blank concave assembled between the two spike tooth concaves will provide a space in which the material is free to turn or agitate so as to strike the rear teeth from a different angle. This setting will in certain conditions produce a more efficient threshing area.

The rear concave teeth will also slow down the travel of material over the grates allowing better separation over this area.

Experimentation with the concaves in the various positions will show the best arrangement for that particular crop being threshed.

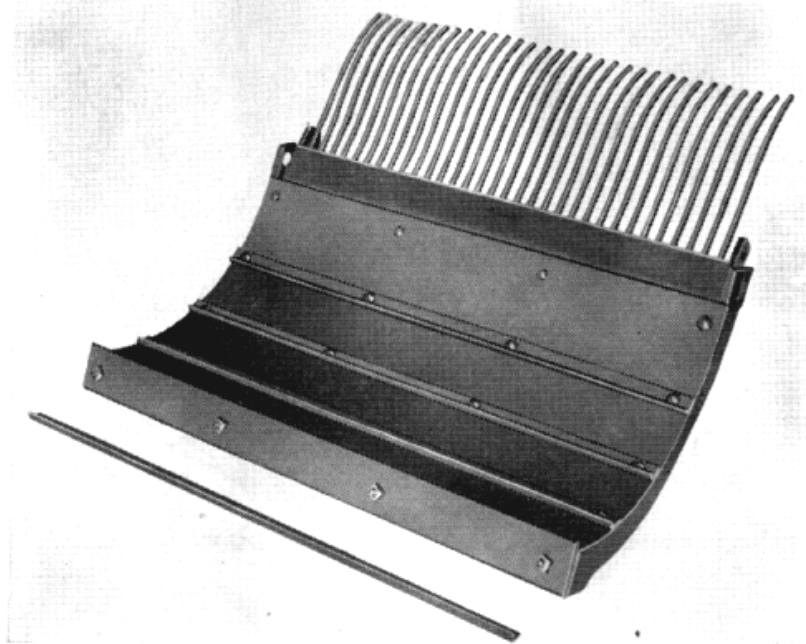


Fig. 34  
Rub Bar Concaves

### CONCAVE BARS (RUB BAR)

There are four concave bars assembled in the combine when shipped. A fifth concave bar is packed with the machine and may be used when combining alfalfa, clover, or other small grains which require more rubbing action to remove the grain or seeds from the heads or pods.

Use just enough concave bars to do a good job of threshing with a minimum of cracking.

### REMOVING CONCAVES (SPIKE TOOTH)

To remove or change concaves, loosen **adjusting screws "A"** (Fig. 35) on both sides of machine; also nuts on **tie rod** which hold the side sheets rigid. Move **adjusting lever** back to last notch on arm, dropping front end of concave assembly as low as possible. Release **springs** which hold bars in concave circle, and remove or adjust bars to suit the operator.

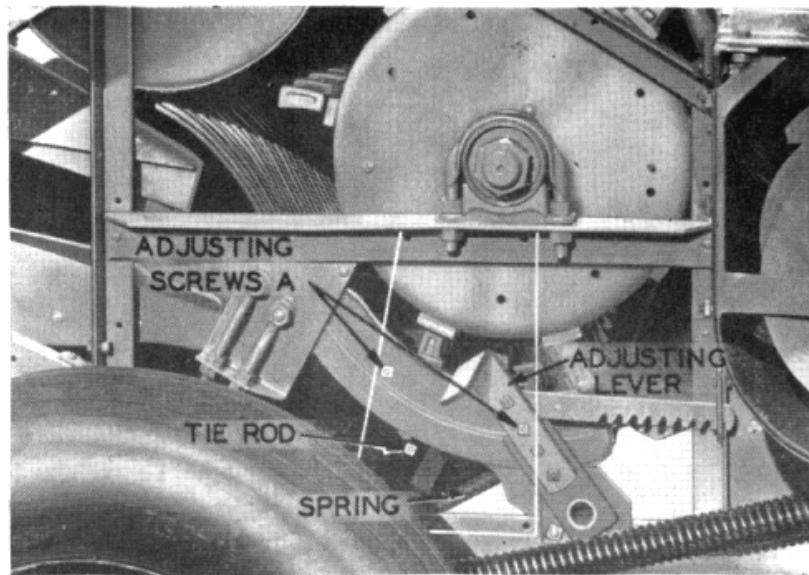


Fig. 35

### REMOVING CONCAVES (RUB BAR)

The rub bar concaves can be removed or changed in the machine using the same procedure as that outlined for the spike tooth combine. The concave bars however are fastened to the floor of the concave section with 4 bolts which must be removed before the bars can be changed.

The front concave bar is perhaps subjected to more wear than any of the other bars. For this reason it has been designed heavier than the other bars and may also be reversed on the machine so that all four corners of the bar may be fully utilized before being replaced.



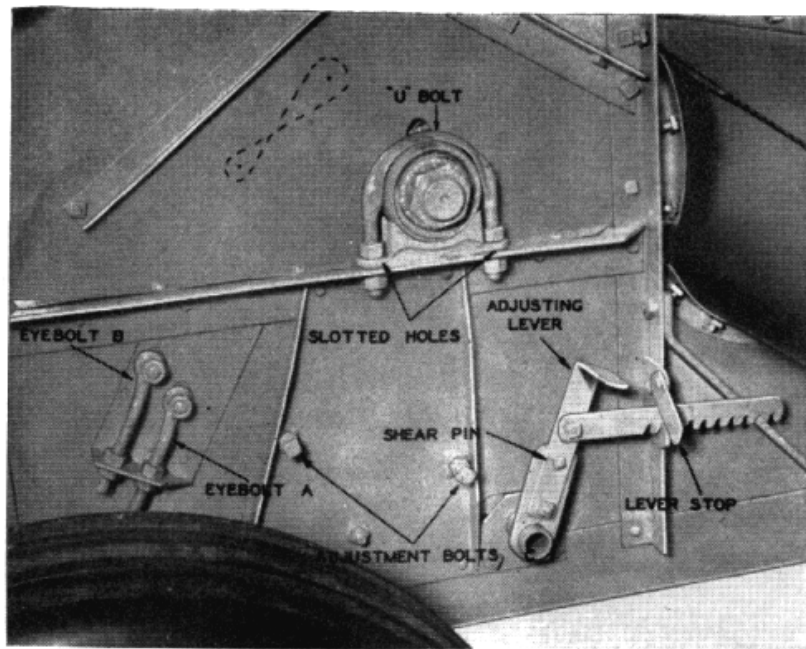


Fig. 36

### ADJUSTING CONCAVES (SPIKE TOOTH OR RUB BAR)

The proper clearance between cylinder and concave is obtained by raising or lowering the concaves. To adjust the front of the concave assembly, release concave **lever stop**, push **adjusting lever** forward to raise concaves, and pull lever toward rear to lower concaves. Movement of one notch on adjusting lever will move concaves approximately  $\frac{1}{16}$ ".

**Eyebolts "A"** located on both sides of the machine are used to level and adjust the back end of the concave section. **Eyebolts "B"** are used to raise or lower the grates.

A **shear pin** is located at the base of the concave adjusting lever so that if a stone or other object comes in contact with the cylinder and is too large to pass through, this pin will shear, allowing the concaves to drop down and thus prevent breakage of the cylinder or concaves. As the concaves drop, the feeder floor resting on the front concave section will swing down also, allowing the obstruction to fall through to the ground.

**Check Cylinder and Concave Teeth for Alignment After Obstruction Has Been Removed From Machine.**

**Adjustment bolts "C"** on both sides of combine, are used to move the concaves sideways. This is a very important adjustment as the cylinder and concave teeth must be evenly spaced in order to mesh properly and produce a good job of threshing. **When adjusting bolts on one side of machine be sure to make corresponding adjustment on opposite side.**

In some cases the side concave adjustment will not prove sufficient to produce a perfect mesh between cylinder and concave teeth. When this condition exists, the cylinder may also be adjusted sideways. Loosen nuts on **"U" bolts** which secure cylinder bearings to horizontal angles through **slotted holes**, and move cylinder sideways to secure proper adjustment.



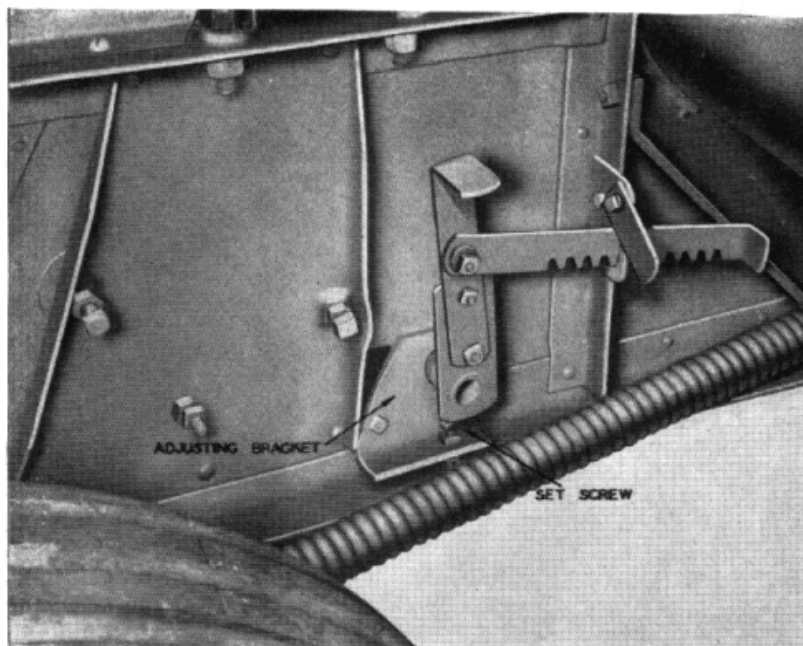


Fig. 37

### CYLINDER AND CONCAVE SPACING (RUB BAR)

With the rub bar type combine, the concaves should be set slightly higher or closer to the cylinder in the front than in the back. In this position a good rubbing action is made between the cylinder and front concave insuring a quick separation of grain from the straw. It also allows an open throat between the rear concave and cylinder through which material is free to pass without being clogged.

### LEVELING CONCAVES

It is important that the concave rub bars are parallel to the cylinder at all times to insure a satisfactory job of threshing. **Adjusting brackets** are provided on both sides of the machine whereby the front of the concaves may be raised or leveled by means of adjusting **set screws**. The back end of the concaves are leveled with **eyebolts "A"** (fig. 36), the same as for the spike tooth combine.

***A Careful Operator***

**IS THE BEST INSURANCE**

**AGAINST AN ACCIDENT**

*—National Safety Council.*

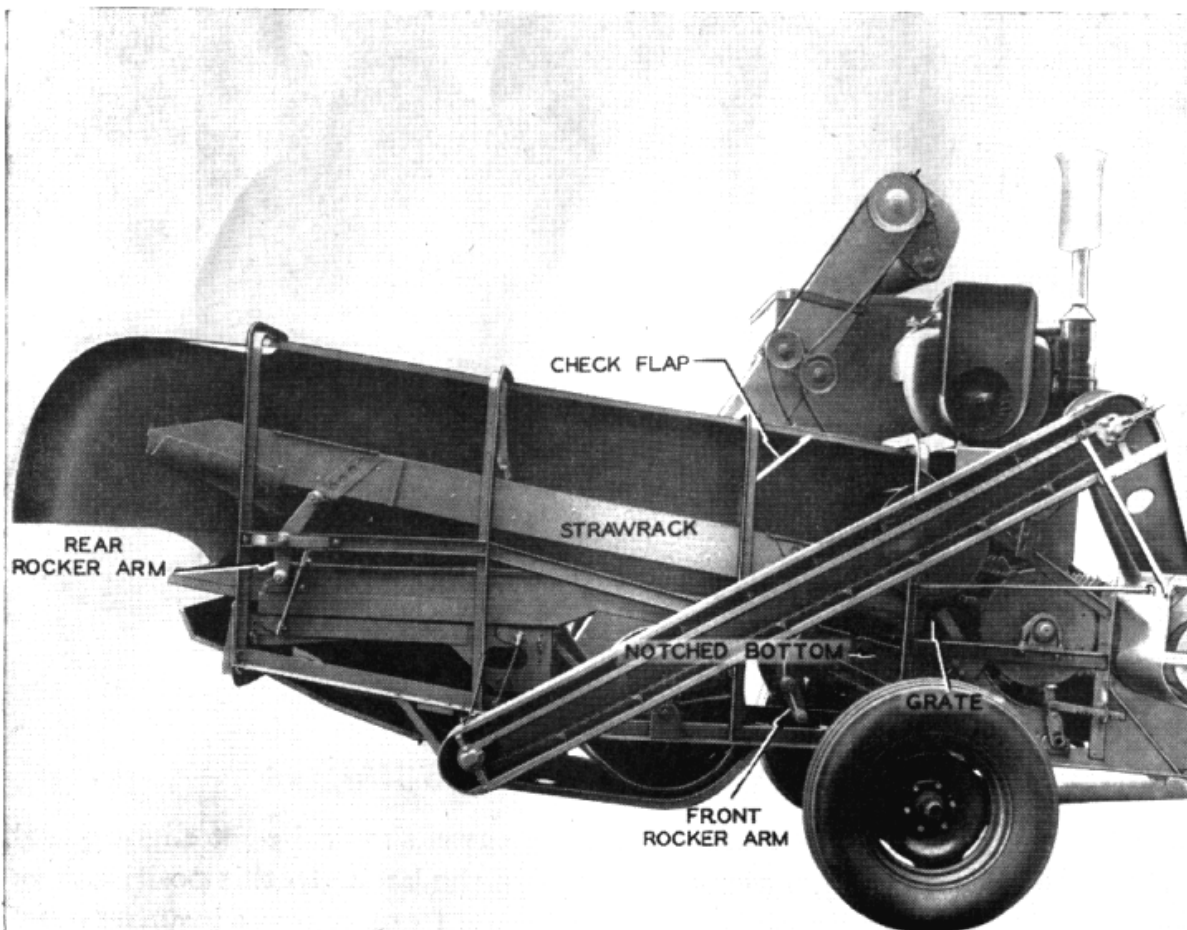


Fig. 38  
Separating Section

## SEPARATING SECTION

The process of separation begins at the grate where the first grains knocked loose by the cylinder fall through the grate finger to the notched floor where they are conveyed to the shoe for cleaning.

The straw and grain that has not been separated at the grate, passes from the beater onto the straw rack where the remaining grain is separated.

The function of the beater is to prevent the straw from following the cylinder and direct it against the front of the straw rack in a uniform blanket so the full length of the straw rack can be used.

The rack consists of four sections which are constructed with wooden grids and sides. It is also equipped with fish-backs to agitate the straw, help work the straw out of the machine, and to keep the straw from going to one side of the machine on hillsides. Rubber strips along the entire length of the rack act as shields, preventing the coarser materials from escaping between the rack and combine side sheets and clogging the chaffer sieve below rack.

The most important factor in producing good work by the straw rack is the speed. The rack should run at 235 strokes per minute at normal speed under a load, and it must be maintained to do good work. Rack speed can be determined by letting the rocker arm strike against the hand and counting for ten seconds. Multiply this by 6 to get the strokes per minute. When the combine is running idle, 39 strokes in ten seconds will be about right.

The straw rack and grain pan are both carried by shafts clamped in formed steel brackets. The ends of these shafts are carried in the rocker arms, the straw rack having a longer leverage than the grain pan so that each counterbalances the other. They are more accurately balanced when the machine is in operation and both are loaded.



Fig. 39  
Adjusting Check Flap

## CHECK FLAP ADJUSTMENT

Back of the beater is a **check flap**, adjustable from the top of the machine, to stop any flying kernels from being thrown out the rear end of the machine.

When threshing light fluffy crops the check flap should be adjusted low over the straw rack. In heavier crops the flap should be in a raised position allowing the beater to spread the material more evenly upon the straw rack, thus aiding separation.

A second non-adjustable check flap is located further back in the combine providing further insurance against material being thrown out the end of the machine.

## GRATE ADJUSTMENT

The finger grates are of the non-clogging type and are adjustable from the outside of the machine by means of **eyebolts "B"** (fig. 36; Page 40).

The grates should ordinarily be carried as high as possible to secure the maximum separation. When long tough straw is encountered, it is sometimes necessary to lower the grates somewhat to prevent the straw from bunching behind the cylinder.

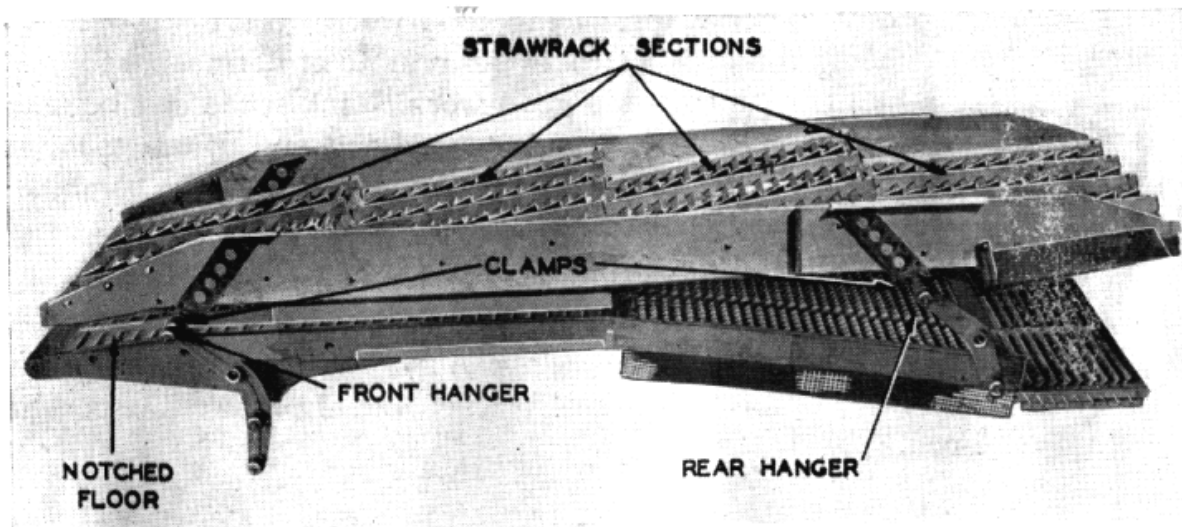


Fig. 40

## REMOVING STRAW RACK

Set straw rack as far forward on stroke as possible. Remove **notched floor** which is secured to front of grain pan assembly with 10 bolts. Through opening in front of grain pan remove the two bolts from each **clamp** that holds the **front hanger** to the rack. Clamps that secure the **rear hanger** to the rack can be removed through back of machine.

Remove hood, and slide straw rack through the rear of machine.

When placing straw rack back in machine make sure that all clamps that hold hangers to rack are tightened securely. Loose clamps will allow the rack to shift on hangers, vibrate excessively, and perhaps damage the entire rack.

## REMOVING SECTION OF RACK

The rack is constructed so any one of the **four sections** can be easily removed, should repairs be necessary. Each section is fastened to the straw rack side rails by six bolts, three on each side of a section. Removal of these bolts is all that is necessary to remove section from rack.

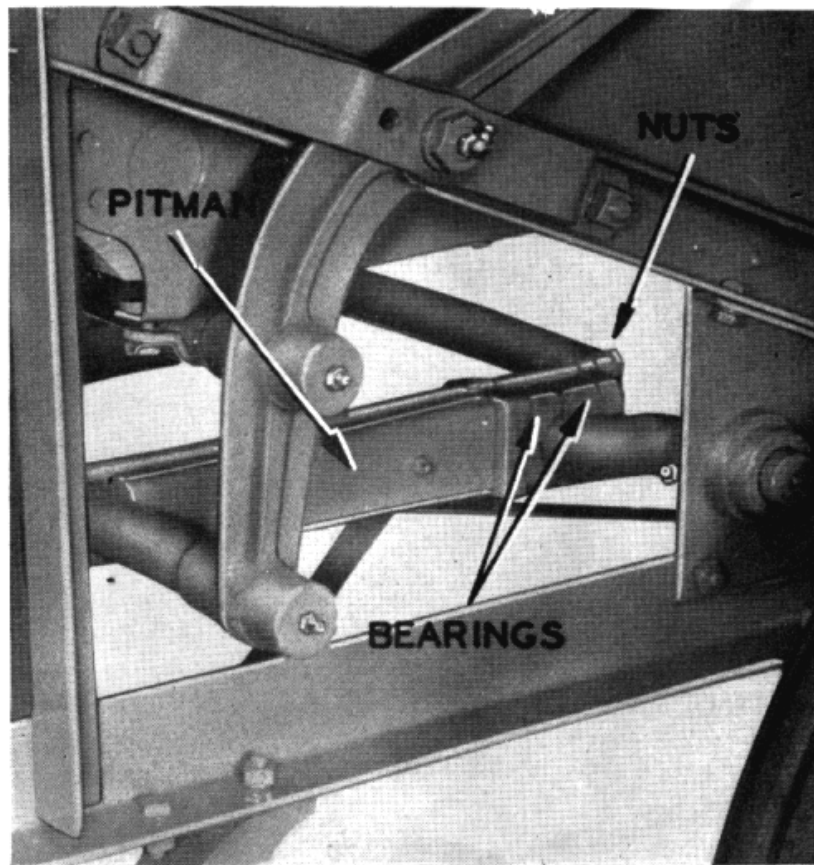


Fig. 41

## STRAW RACK AND GRAIN PAN DRIVE

The straw rack and grain pan are driven by the front rocker arms on both sides of the machine. These are in turn driven by pitmans connected to the straw rack crank shaft.

**Wooden bearings** are used to secure the **pitmans** to the throws or eccentrics on the crank shaft. These bearings are split in the middle so they can be adjusted for proper tension by means of **nuts** holding bearing cap on end of pitman.

If looseness develops from natural wear, tighten bearings on shaft or if worn excessively, replace with new bearings. Loose drives set up a vibration which can damage entire straw rack or grain pan.

**Check Bearings Often. Lubricate Thoroughly.**



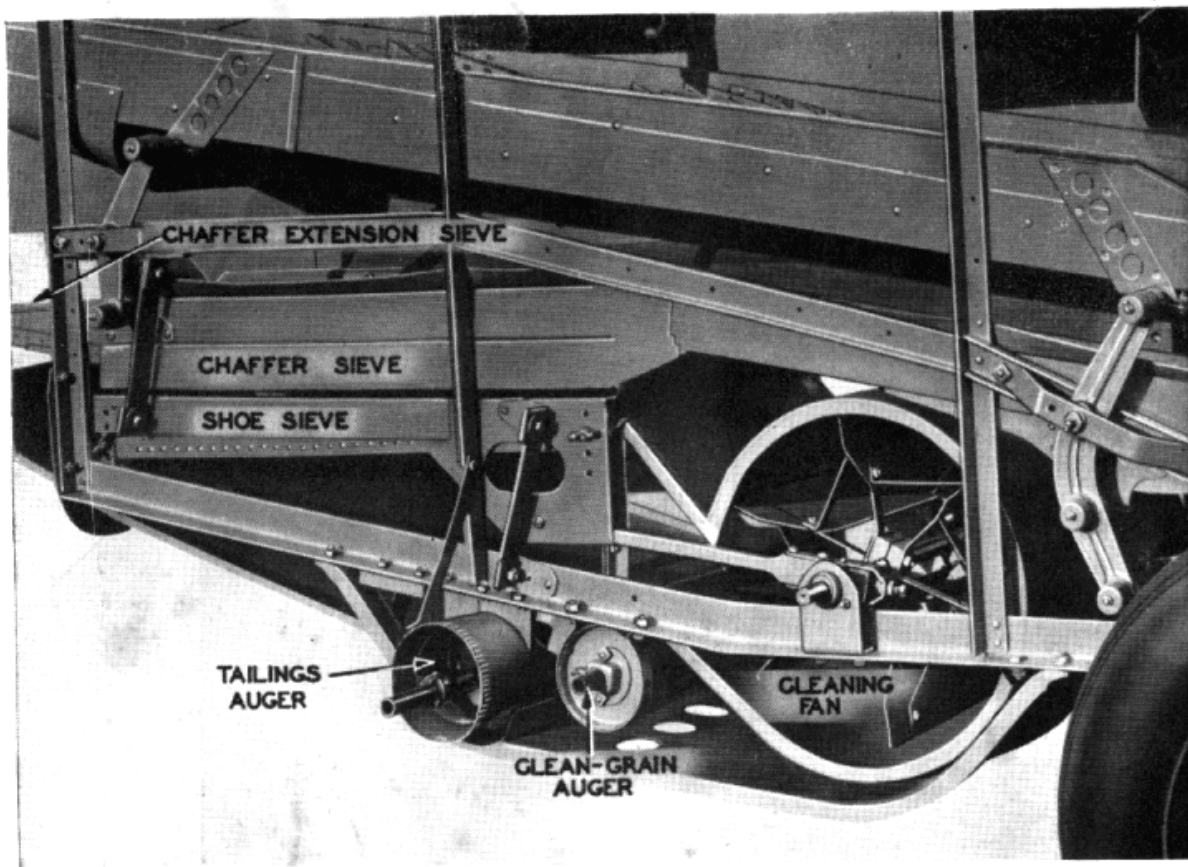


Fig. 42  
Cleaning Section

## CLEANING SECTION

After the grain has been separated from the straw, it is mixed with a quantity of chaff or refuse which has passed through the grates and straw rack with the kernels. The function of the cleaning apparatus is to separate the grain from this chaff and dispose of the refuse. This is done by the grain pan which contains the chaffer and chaffer extension sieves, the shoe which contains the shoe or finishing sieve, and the cleaning fan.

The grain and chaff separated at the grates falls to the notched floor on the front of the grain pan and is conveyed back to the chaffer sieve. The grain separated by the straw rack also falls on the grain pan and chaffer sieve where the rough cleaning is done. The heavier material passes over the adjustable chaffer to the chaffer extension and out of the machine. Any unthreshed grain falls through the chaffer extension into the tailings auger and is returned to the cylinder for rethreshing.

The grain and a minimum of small chaff fall through the chaffer sieve onto the adjustable shoe or finishing sieve where the final job of cleaning takes place. The clean grain is delivered by the grain auger through the grain elevator to the grain bin or bagger.

## FAN

The six bladed fan directly in front and slightly below the shoe, delivers a strong, even blast of air toward the sieves which blows away all material lighter than the grain.

The most important function of the fan blast is to keep the material "alive" on the sieves. This means the fan blast must be strong enough so when combined with the shaking action of the shoe, it will keep the chaff lifted slightly off the sieves. The heavier grain can then drop down through the sieves onto the grain floor and auger.

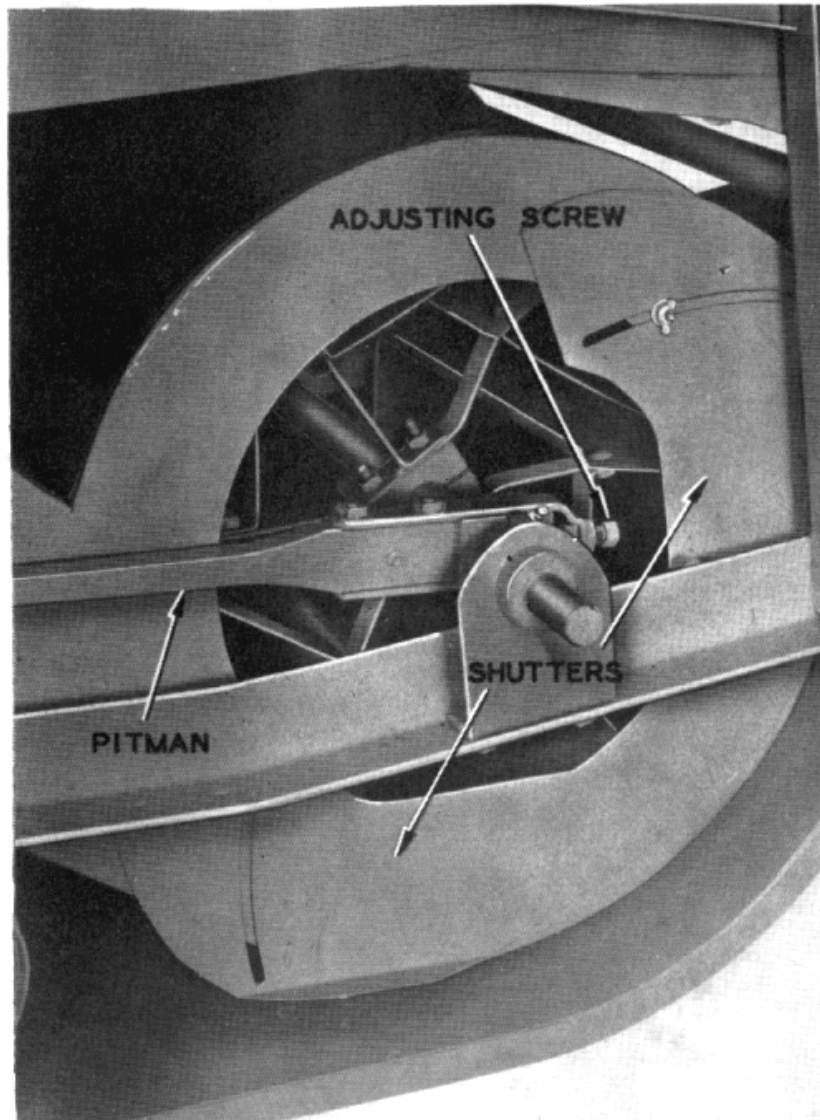


Fig. 43

## FAN BLAST ADJUSTMENT

The fan is equipped with adjustable **shutters** located on ends of fan drum which regulate the air blast. Adjust the shutters equally on both sides of the combine so there will be an even distribution of air on the sieves. When the right hand fan blind is adjusted it affects the wind on the left side of the shoe and the left hand blind affects the right side of the shoe.

The amount of air required for good cleaning is determined by observing what comes over the chaffer extension. The blast should be strong enough to "lift" the chaff from the sieves but not enough to blow grain over. If good grain comes over, it is probable the blast is too strong. It should be reduced by closing the shutters on ends of fan drum. It is also probable that the chaffer and extension sieves should be opened slightly more. With the sieves and fan properly adjusted, the rear end of the sieves should be almost free of grain and chaff.

## SHOE AND SHOE SIEVE DRIVE

The shoe containing the finishing sieve has a vibrating motion imparted to it from eccentrics on the fan shaft.

**Wooden pitmans** (Figs. 43 & 44) used to drive or shake the shoe assembly are connected to the fan shaft by means of wooden bearings. These bearings are split, and may be adjusted for proper tension with **adjusting screw** on "U" strap used to connect pitman and bearings.

If looseness develops from natural wear, tighten bearings on shaft or if worn excessively, replace with new bearings.

**Check Bearing Often. Lubricate Thoroughly.**

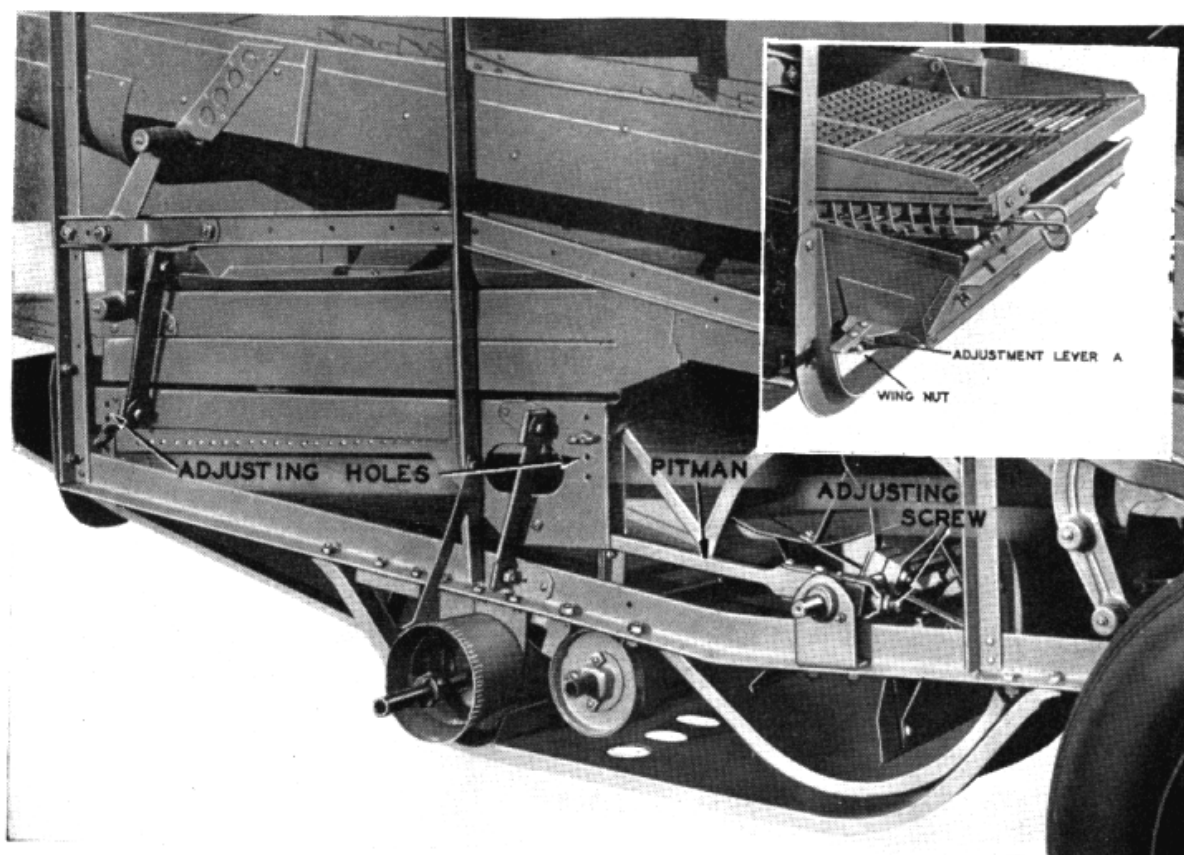


Fig. 44

## SHOE SIEVE ADJUSTMENTS

The shoe sieve should be opened just wide enough to allow the grain to fall through without an excessive amount of grain being carried back to the tailings

auger. This adjustment is made with **adjusting lever "A"** (inset) Fig. 44 at left, rear end of shoe assembly. Move lever forward to open sieves and back to close. A **wing nut** is used to lock the adjusting lever in the desired position.

Four **adjusting holes** are provided in the front and rear ends of the shoe sides for each of the bolts that hold the shoe sieve in place and provide leveling adjustment. In nearly all cases it is advisable to adjust the shoe sieve as nearly level as possible. Lowering the sieve too much at the rear end may result in too many tailings thereby causing excessive cracking.

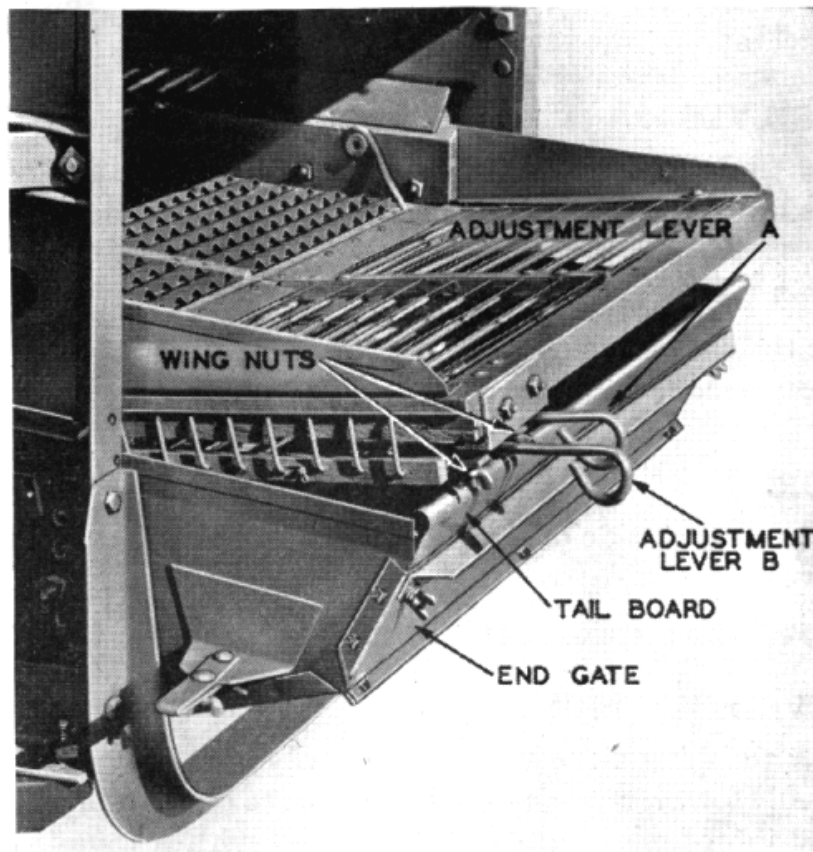


Fig. 45

### CHAFFER SIEVE ADJUSTMENT

The chaffer sieve removes the coarser material from the grain. This sieve should be set fairly well open to allow all the grain to pass through but not wide enough to allow an excessive amount of chaff to fall on the shoe sieve.

**Adjustment lever "A"** is used to open and close chaffer sieve. Wing nut below lever will lock sieve in the desired position.

### CHAFFER EXTENSION SIEVE ADJUSTMENT

The chaffer extension removes the unthreshed heads from the chaff and drops them into the tailings auger to be returned to the cylinder through the tailings elevator. The chaffer extension should generally be opened wider than the chaffer sieve.

**Adjustment lever "B"** is used to open and close chaffer extension sieve. Wing nut below lever will lock sieve in the desired position.

## TAIL BOARD ADJUSTMENT

On the back end of the shoe is a detachable **end gate** (Fig. 45) with an adjustable **tail board**. This tail board has a decided effect on the blast of air delivered by the fan against the sieves. When in a raised position, it increases the pressure of the blast in the rear end of the shoe and directs it upward. This will lift the chaff on the rear end of the sieves. When the board is raised it will also stop the grain or seeds from being blown out over the shoe.

The tail board should ordinarily be adjusted one-third to one-half of the way up. This prevents the blast from blowing straight back through the rear of the shoe.

## REMOVING SIEVES

The chaffer and chaffer extension sieves are secured in the grain pan by means of hooks on each side of chaffer sieve. To remove sieves from machine, remove nuts on hooks, directly below front end of the chaffer extension, and slide sieves from grain pan.

To remove the shoe sieve, remove the four adjusting bolts holding the sieve to the shoe sides; remove end gate and slide sieve from rear end of shoe.

## ACCESS DOORS

Access doors on each side of the shoe assembly allow inspection of the clean grain below sieves.

Be sure that doors are closed at all times except during inspection interval.

## SPECIAL SIEVE EQUIPMENT

The shoe or finishing sieve will satisfactorily clean almost any crop when properly adjusted. However in some crops and due to certain threshing conditions, a slightly better job of cleaning can be obtained with a round or slotted hole sieve (see pages 67-68-69). These sieves may be ordered extra.

## GRAIN AND TAILINGS ELEVATOR

The grain elevator carries the clean grain from the grain auger to the grain bin or bagger.

The tailings elevator returns the unthreshed heads from the tailings auger to the cylinder for rethreshing. The tailings are a good indication of the work done by the machine. If the tailings show a large quantity of unthreshed heads, the fault is obviously in the threshing and the concaves should be raised or more teeth or bars added. On the other hand, if there is too much chopped straw and chaff on the sieves or in the tailings, it is probably due to a close concave setting, too many teeth or bars, or not enough blast to scatter the light material to keep the sieves clean.

The tailings should be small in amount, contain no light chaff and very little plump grain. Sieves should be adjusted so very little threshed grain goes into the tailings, as threshed grain returned is apt to be cracked by the cylinder.



## UNTHRESHED HEADS

Unthreshed heads in the tailings may be caused by insufficient or poorly regulated cylinder speed, improper concave clearance, not enough concave bars or teeth, irregular feeding, or the grain being too damp to combine. If correction of the first four causes fails to eliminate the trouble, the crop is probably too green or too damp to thresh, and should be left to cure a little longer.

## CRACKED GRAIN

Crackage in the clean grain may be due to excessive cylinder speed, insufficient concave teeth, too many bars or teeth in the concaves, or too much grain in the tailings. If there is more than a trace of threshed grain in the tailings, make necessary adjustments on fan and sieve which should tend to eliminate difficulty. Reduction of cylinder speed and increased concave clearance are other possible remedies for trouble of this nature.

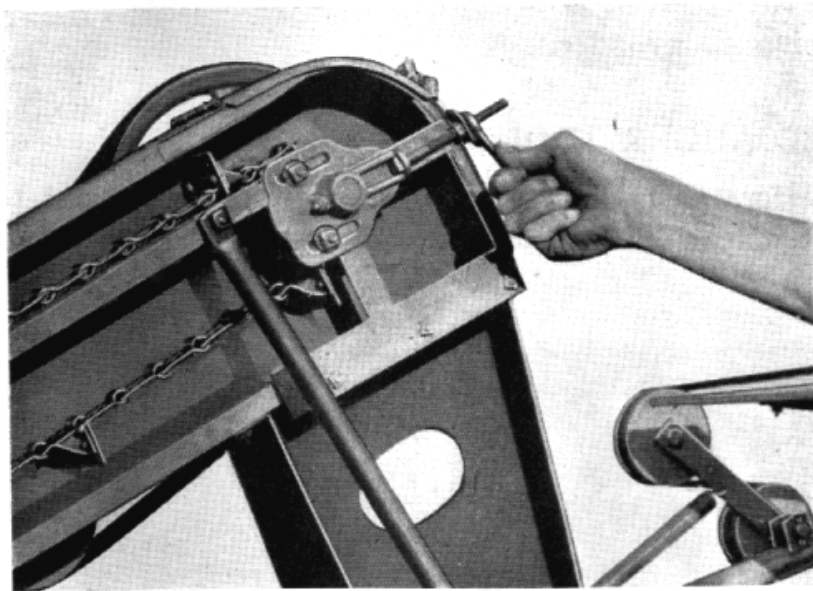


Fig. 46

## CHAIN ADJUSTMENT

Elevator chains are adjusted by bearing **brackets** on upper head. **Nuts** are screwed onto adjusting bolts to tighten chain and off to loosen. Adjust both sides evenly. After adjusting chains, check tension of V-drive belts and adjust accordingly.

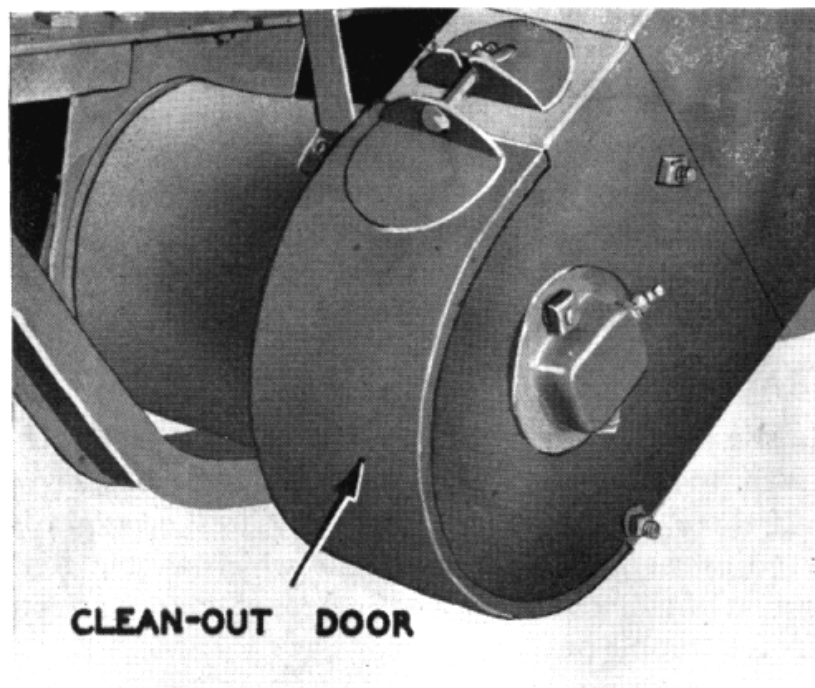


Fig. 47

### CLEAN-OUT AND INSPECTION DOOR

Clean-out doors at bottom of elevators permits easy inspection of chain and flights, and cleaning out of grain and weeds.

A door in the spout at upper end of tailings elevator permits inspection of tailings returning to cylinder.

### PERFORATED AUGER TROUGHS

Special perforated troughs, for both the clean grain and tailings augers, may be ordered extra. These troughs assist in removing dirt and sand from grain and bean crops.

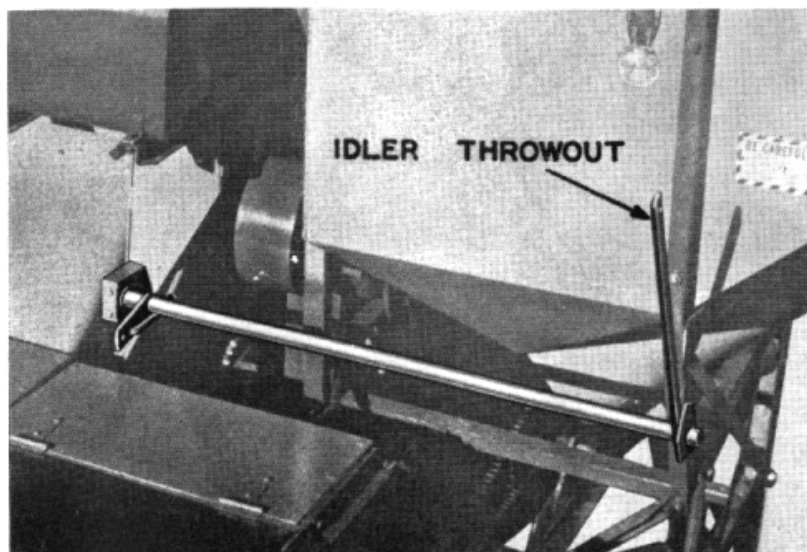


Fig. 48

## ENGINE DRIVE IDLER

A throwout arm for the engine **drive idler** (Fig. 48) is located on the left side of the machine, immediately behind the header auger trough.

To engage drive belt between engine and power cross shaft pull lever forward the entire distance. A spring is used to maintain the proper belt tension while the drive is in operation.

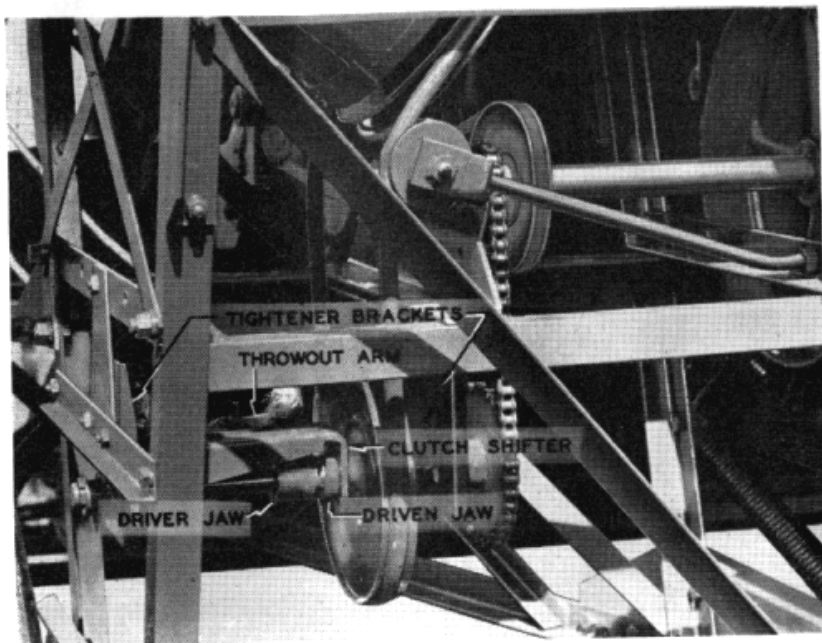


Fig. 49

## GRAIN BIN AND DISCHARGE AUGER

The grain bin on the "A" combine has a capacity of 24 bushels. The unloading is done by means of an auger in the discharge tube which is driven by a pulley on the grain bin jack shaft. This in turn is driven from the power cross shaft by means of a chain and sprockets. This drive is provided with **tighteners** to insure against slipping, eliminating time wasted in unloading.

The unloader drive is operated by a **throwout arm** which extends from the **clutch shifter** to within easy reach of the operator.

The "A" combine is designed so that the grain bin can be unloaded while the combine mechanism is still operating. Pull the right hand rope connected to the throwout arm which will engage the **driven clutch jaw** on sheave with the **driver jaw** on the grain bin jack shaft. When bin is unloaded a pull on the left hand rope will disengage those jaws transmitting power to the unloading mechanism.



Fig. 50

## DISCHARGE AUGER

The discharge auger can be easily removed from the grain bin for convenience in transport. The upper section of the discharge tube slips over the lower section attached to the grain bin, the auger being driven by means of clutch plates on the upper and lower discharge shafts. Remove bolts from **support bracket** which secures auger to bin; grasp handle on bottom of discharge and lift from unloading position.

Any accumulation of grain in bin can be removed through **clean-out door** in the lower section of discharge auger. This also serves as a drain for any accumulation of water in bin.

**MOST FARM ACCIDENTS**, like industrial, home, and highway accidents, are caused by the failure of some individual to observe simple and fundamental safe rules or precaution. For this reason farm accidents, just as other types of accidents, can be prevented by recognizing the cause of accidents and doing something about it before the accident occurs.

—National Safety Council.

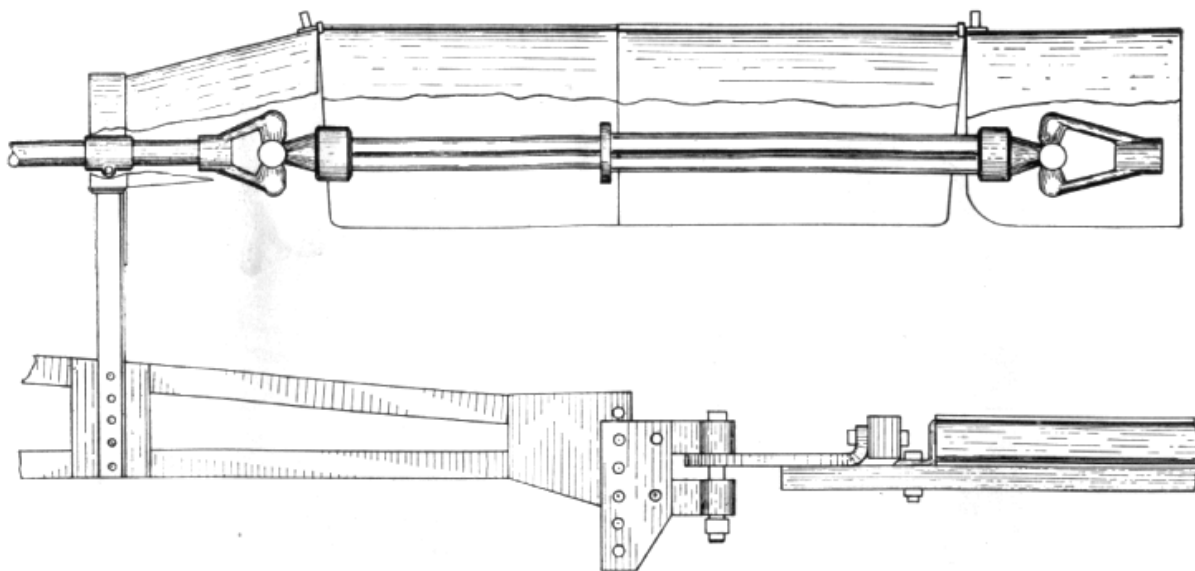


Fig. 51

Correct Method of Installing Drawbar and Telescoping Shafts

## DRAWBAR AND POWER TAKE OFF DRIVE

When connecting the combine to the tractor, the hitch-point should be in the center of the two universal joints that connect the tractor to the power take off shaft. This location is made to conform to A. S. A. E. standards intended to assure greater protection for operator and to simplify the problem of connecting the hitch. If tractor used was built prior to adoption of this A. S. A. E. standard, conversion parts needed to secure proper hitch, may be obtained from the tractor manufacturer. If the tractor universal joint is too far back, that is, nearly over the hitch point, this joint will assume too great an angle on short turns, causing a severe stress in the power shaft and universal joint. **It is Important To Have This Joint Securely Fastened To The Tractor Power Take Off Shaft.**

The length of the shaft between the universal joints must be determined by trial. Hitch the combine to the tractor without joining the telescoping shaft. Holding the shaft along-side the tube, turn the tractor as far right as it will ever be operated. Then repeat procedure by turning tractor to the left. If it is indicated that the shaft will hit the universal joint in either position, it must be shortened so that it will clear at least 1" when the tractor is turned to the extreme position. At least 6" of the shaft should be in the tube at all times.



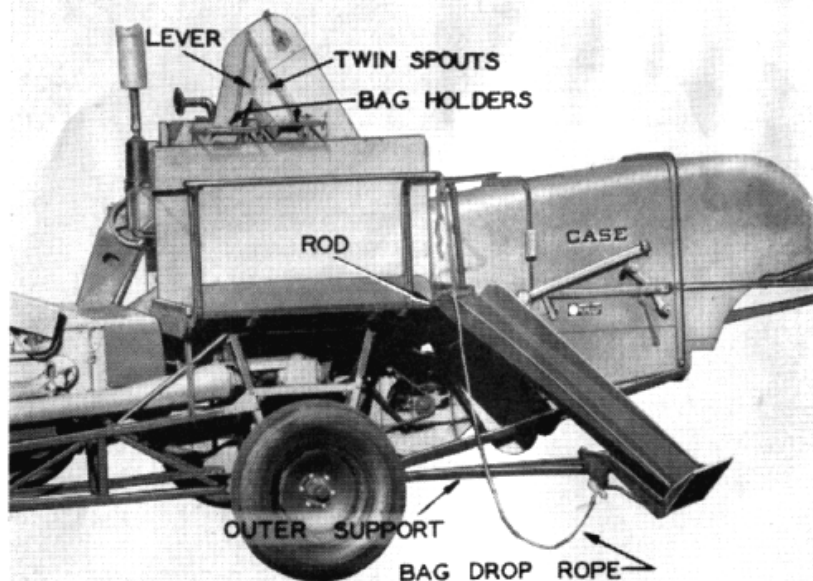


Fig. 52

## BAGGING PLATFORM

The bagging platform is installed on machines, replacing the grain bin, when it is desired to sack the grain or seed being threshed.

**Twin spouts** attached to the upper head of the grain elevator directs the grain into bags supported by **holders** directly below spouts. **Lever** on twin spouts is used to direct grain from one spout to the other enabling operator to tie and dispose of bags when filled.

The end gate on the bag chute can be lowered, using **rope** attached to trip lever, enabling the operator to dispose of filled bags at the desired location. Three bags may be placed on chute before being unloaded.

The bag chute can be easily removed when combine is to be transported from one field to another. Remove bolt which secures the **outer support** pipe to the inner support pipe; remove **rod** connecting chute to floor of platform, and place chute on platform floor while combine is being transported.

## JUMP CLUTCH

A safety jump clutch is placed on the end of the power take off shaft connecting with the gear box stub shaft. If the machine becomes clogged or any unusual strain is put on moving parts, the clutch will slip before any part of the machine is broken.

When the clutch slips, stop immediately and determine the cause. Do not increase tension on clutch until it has been definitely established that the machine is not clogged or damaged. Excessive lubrication will also cause clutch to slip.

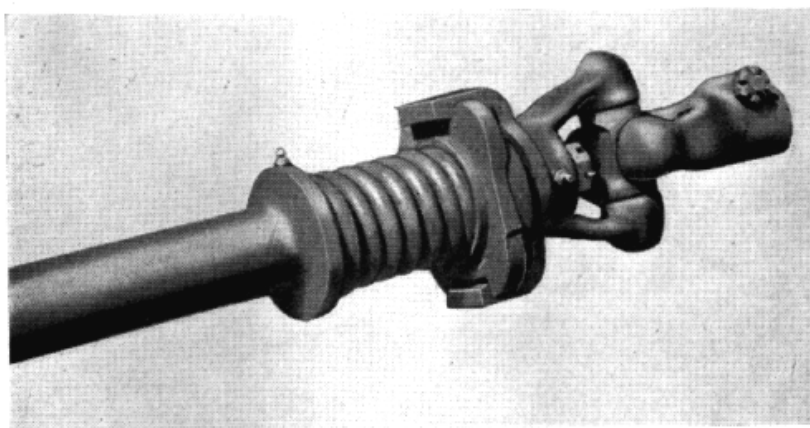


Fig. 53

To remove excessive lubrication from jump clutch, lock the universal joints so that portion of shaft will not turn. Turn front section of shaft counterclockwise until clutch jaws are open. Flush with kerosene until all parts are clean.

Before starting to combine in the field it is good practice to slip this clutch to be sure it is not clogged with paint.

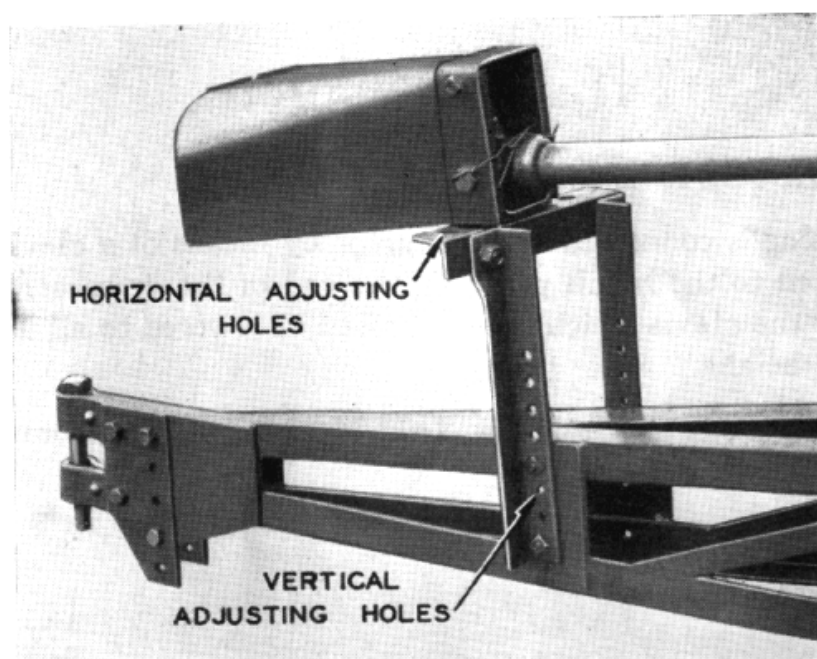


Fig. 54

## STEADY BEARING SUPPORT

Provisions have been made on the steady bearing support (Fig. 54) for both **vertical** and **horizontal** adjustment of the bearing. It should be located so as to have the entire drive shaft assembly in as near a direct line as possible between the power take off connection on the tractor and the gear box connection on the combine.

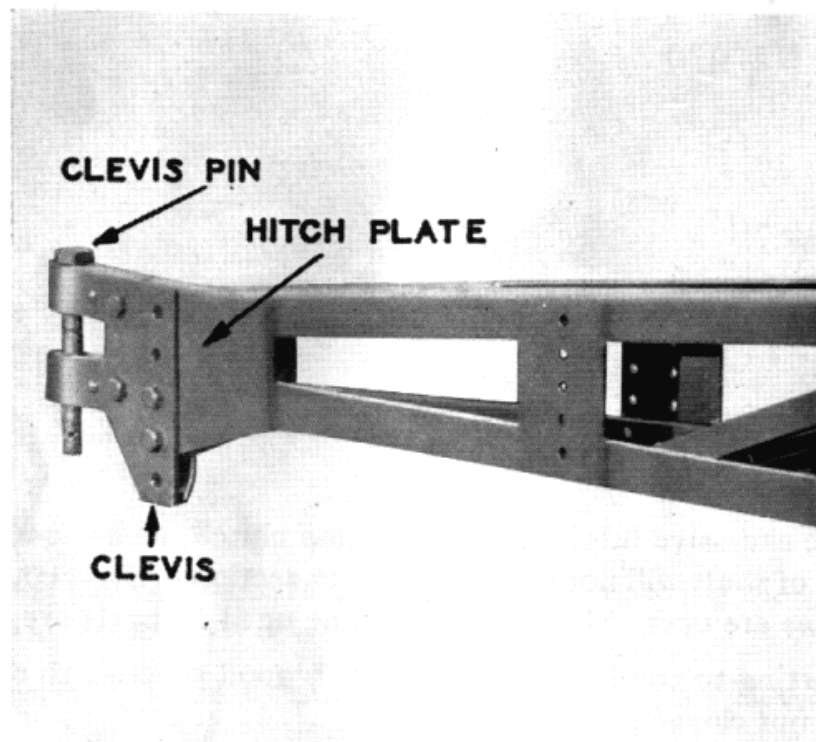


Fig. 55

## DRAWBAR ADJUSTMENTS

The combine is connected to the tractor by means of a **clevis pin** through **clevis** connected to the **hitch plate** on the end of the drawbar. This plate has extra holes for the **clevis** which may be raised or lowered to adjust the drawbar to the proper height.

Drawbar Should Be Adjusted So That Main Sill Of The Combine Is Parallel To The Ground.

## AFTER SEASON CARE OF COMBINE

Store combine in a dry place.

Remove the canvases, clean, and store in a dry building. Combine should be cleaned both inside and out with a stiff brush. Chaff and dirt retain moisture which will in time rust the metal parts and rot the wood parts.

Remove belts, clean, and store in a dry, cool place.

Remove all accumulations of straw from rack, and conveyor chain and floor.

Clean the various sieves in the shoe, including the extension on front of shoe.

Clean out augers and elevators. Leave doors open on bottom of elevators.

After cleaning grain bin and discharge auger, leave cleanout door open, to permit drainage of moisture from bin.

Grease every bearing thoroughly. Grease the sickle and guards with a heavy oil.

Paint all parts from which paint is worn.

Block up the axle at each end to take the weight off the tires. Do Not Deflate Tires.

Give the machine a thorough check-up and make a memorandum of parts worn and needing replacement. These should be ordered in plenty of time to be installed before the next harvest.

A machine that is carefully taken care of will give more than double the service that can be expected from one that is neglected.

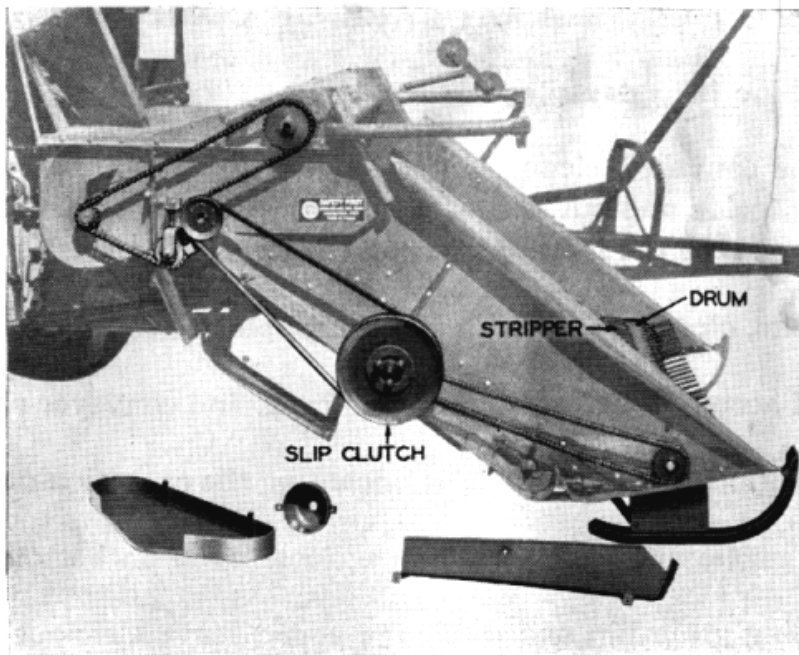


Fig. 56

## PICKUP ATTACHMENT

The pickup attachment is used to pick up windrows, and deposit them on the header platform canvas.

Pickup should be operated just fast enough to elevate the windrow onto the platform without tearing the windrow apart. If speed is too slow the crop will be pushed ahead of the pickup.

The work of the pickup can be improved in conditions where straw is light and fluffy, by leaving the reel on the combine, and setting it down and back where it can help in delivering material back onto the platform.

It is recommended that the sickle be run when the pickup is operated in weedy or viney field conditions. The operator should use his own judgment as to whether or not the sickle should run in normal field conditions.

## TO REMOVE PICKUP

The unit is designed so it is easily removed for converting combine from pickup work to straight combining with a minimum amount of work and time.

1. Remove shield and chain.
2. Remove "V" belt; also **slip clutch** assembly and sprocket and sheave which drive pickup.
3. Remove cotter pin on L. H. end of pickup drum shaft.
4. Pull shaft (with sprocket) out of drum and remove bearings.
5. Remove **drum** and **stripper** assembly.



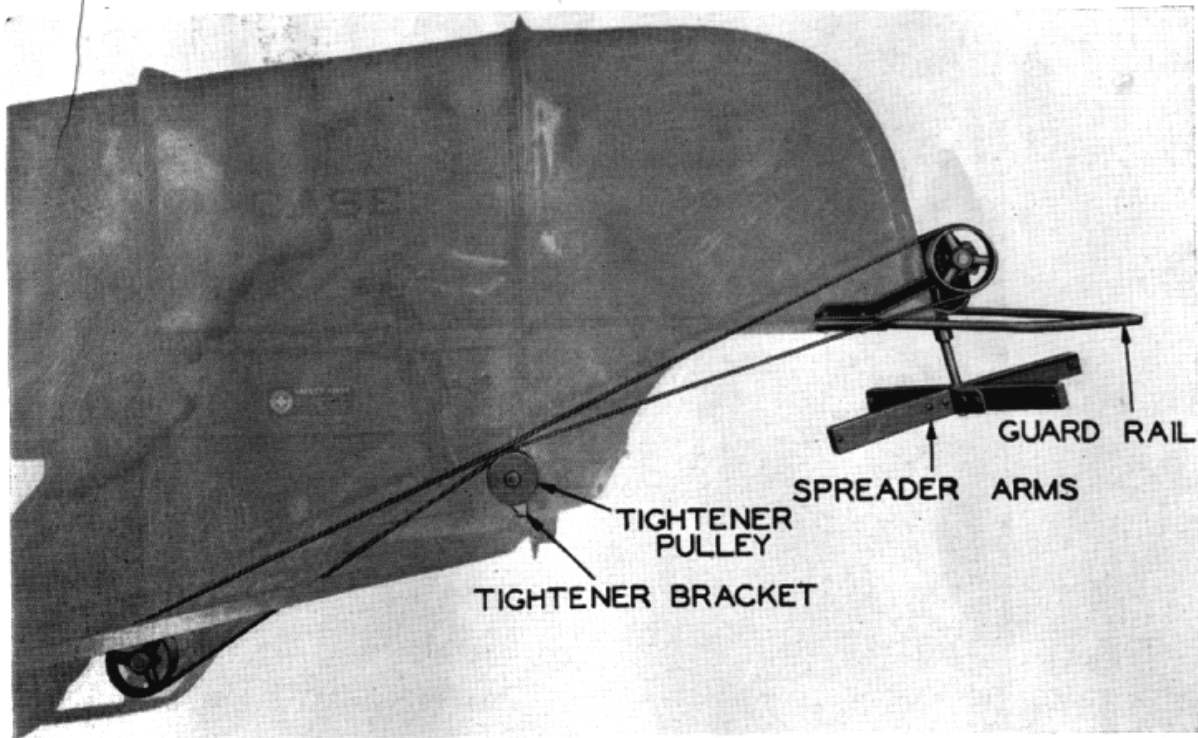


Fig. 57

## STRAW SPREADER ATTACHMENT

The straw feeding out the back end of the combine falls into windrows which are later converted into baled hay or used for other practical purposes.

However, if it is desired to use this straw as a fertilizer, a straw spreader is installed which will scatter the straw upon the ground, producing a more even distribution to be plowed under.

The straw spreader is driven by means of a pulley on the tailings auger shaft. When installing spreader be sure that pulleys are in alignment and that belt has proper tension. Adjustment is secured through the **tightener pulley** mounted on the fourth post back of cylinder

The **spreader arms** and shaft assembly may be removed from machine by loosening set screw and removing cotter pin which secures assembly to stub shaft in gear assembly. **For safety be sure to install guard rail provided with spreader.**

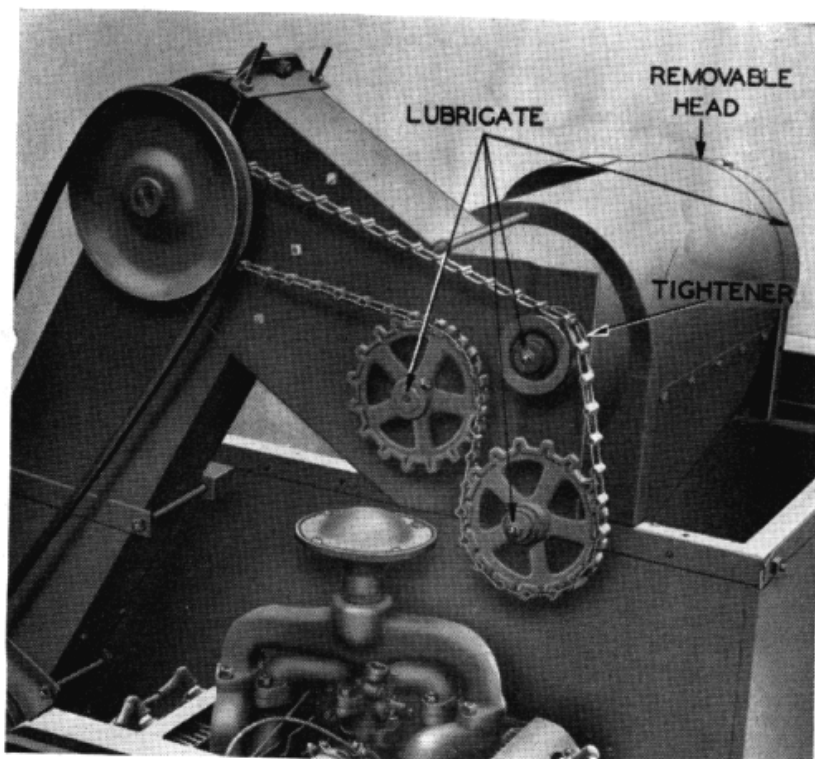


Fig. 58

## ROTO-CLEANER ATTACHMENT FOR GRAIN BIN

The roto-cleaner is used on machines for conditions where weed seeds in clean grain present a problem.

This attachment is installed on top of the grain bin, being attached to the upper head of the grain elevator. Grain passes from the elevator thru the roto-cleaner intake spout into the rotor assembly where it is conveyed by an auger to the discharge spout and dropped into the grain bin. In passing through the rotor section, the weed seeds are separated from the grain by means of a cylindrical screen, and fall through the weed seed spout down into the weed seed pan to be disposed of.

## CHANGING SCREENS

To remove screen, loosen nut on bolt which holds the outer end of screen to the **removable head**, and remove the two wing nuts from the bolts that hold the removable head, remove the head and screen can be changed.

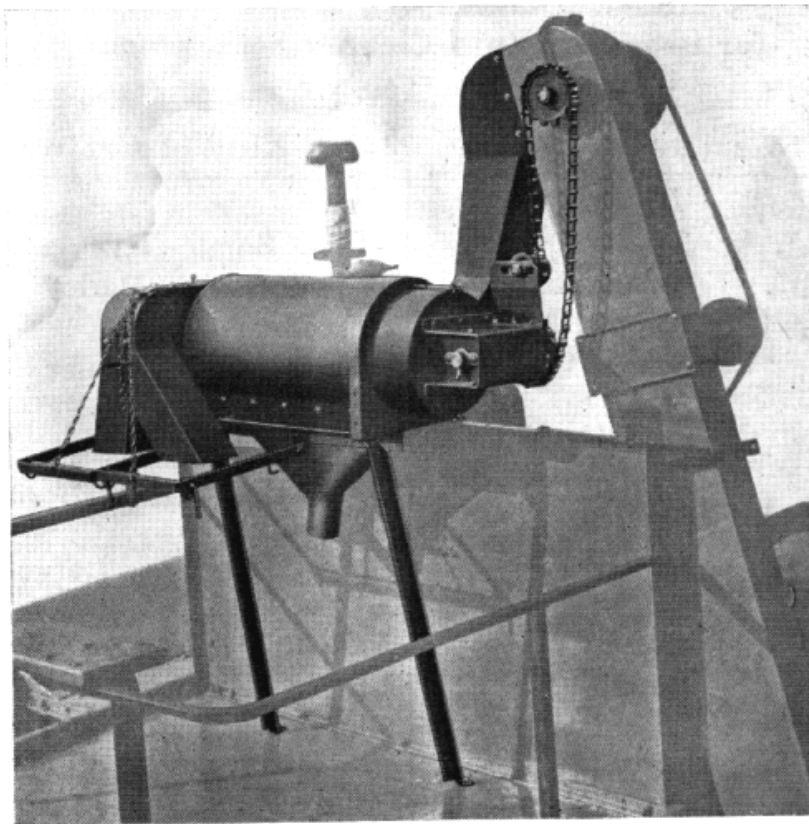


Fig. 59

### **ROTO-CLEANER ATTACHMENT FOR BAGGER COMBINE**

The roto-cleaner is also used on bagger machines for conditions where weed seeds in clean grain present a problem.

This attachment is installed on top of the bag holder angle with supporting braces. The cleaning process is the same as for the grain bin roto-cleaner with the exception that the clean grain is discharged from the roto through the twin spouts to be sacked.

### **CHANGING SCREENS**

The roto-cleaner screen can be removed without removing the twin spouts from the discharge head. Follow same procedure as outlined for grain bin roto-cleaner.

**The following cylindrical classifying screens (extra) are available  
for use with Roto-Cleaner attachment**

Hole Size (Inches)		Kind of Grain or Seed
.125 or $\frac{1}{8}$ ",	Triangular	Beets
.140 or $\frac{9}{64}$ ",	Triangular	Wheat Small - Rye
.165 or $\frac{11}{64}$ ",	Triangular	Wheat - Oats - Barley
.070	Round	Lespedeza - Flax
$\frac{5}{64}$ x 1",	Slotted	Small Beans - Lettuce Seed
$\frac{3}{32}$ x $\frac{3}{4}$ ",	Slotted	Peas
$\frac{1}{8}$ x $\frac{3}{4}$ ",	Slotted	Soy Beans - Peas
$\frac{9}{64}$ x $\frac{3}{4}$ ",	Slotted	Separating Oats from Peas and Vetch
$\frac{5}{32}$ x $\frac{3}{4}$ ",	Slotted	Pinto Beans - Large Soy Beans or Peas
$\frac{11}{64}$ x $\frac{3}{4}$ ",	Slotted	Reducing Dockage of Weed Seed
$\frac{5}{32}$ ",	Round	Clover - Cane
$\frac{1}{20}$ ",	Round	Clover - Alfalfa - Carrot Seed
$\frac{1}{25}$ ",	Round	Onion Seed and Timothy
$\frac{1}{12}$ ",	Round	Poppy and other very fine seed crops
$\frac{3}{16}$ ",	Round	Flax and some Clover crop
		Beans

## WINDROWING

Threshing of weedy grain and crops that ripen unevenly has always presented a serious combining problem. Where conditions of this kind are encountered year after year, many farmers use the windrow pickup method of harvesting. By windrowing the grain, the crop and weeds dry out and when dry do not present a serious threshing problem.

Aside from the fact that green weeds are often harder to get through the machine, there are two main reasons why weeds are troublesome in the combine. First, they tend to break up and go through the sieves with the grain and from there into the bin. Second, they contain moisture which is imparted to the grain. Some crops, such as oats, are comparatively easy to handle, while flax is more difficult to thresh and this must be taken into consideration.

Many buyers of small combines will be using binders for windrows. This will necessitate using good judgment, always remembering that a five or six foot combine cannot be expected to successfully handle a heavy swath that is too wide for the combine.

It is not possible to convey by instructions how wide a swath or how heavy a windrow can be. That must be determined by the experience of the individual operator. However, with the realization that a windrow that is too heavy seriously retards harvesting progress, and results in loss of grain and perhaps even damage to the machine, it is only good judgment to lay a reasonably light windrow, then, if possible, higher travel speeds may be used if the capacity of the machine is not fully utilized.

The straw and heads should be laid nearly parallel to the direction of travel—less than  $10^{\circ}$  from parallel. The purpose of laying the windrow a little out of parallel with direction of travel is to slightly increase the width of the windrow. A wider windrow is supported by more stubble and can be handled easier by the combine.

Care should be taken not to get straw too much out of parallel with direction of travel or the butts may predominate on one side of the windrow, the heads on the other. The heads being heavy and having only the stubble to support them, are apt to fall through to the ground.

The angle of laying can be controlled by the bend of the outer edge of the trough provided at the lower end of the improvised windrower deck. Precaution should be taken to be sure the windrow is not laid in a wheel track.

## WHEN AND HOW TO WINDROW

Grain should be windrowed at just about the time that it is ready for binder cutting. If weather conditions permit, it is advisable to wait a few days longer. This will give the grain a little longer to fill out.

The windrow should be laid from a stubble from 6" to 8" high. A stubble of this height will allow free circulation of air under the windrow and the straw is usually stiff enough to support the windrow without bending and allowing heads to come in contact with the ground. Heads that touch the ground are difficult to pick up and will sprout in damp weather.

Since small windrows cure more rapidly and dry out sooner after heavy rains, it is seldom necessary to turn the crop if the windrow has been properly laid. This reduces handling costs and losses from shattering.

While windrowing can be planned to lengthen the harvesting season, thereby increasing the acreage possible to harvest with the combine, it is very desirable to pick up the crop as soon as it is properly cured. Extended delays may result in difficult handling, higher losses from shattering and entire loss of crop in the event of unfavorable weather.



## CORRECTIVE ADJUSTMENTS

It would be impossible to give exact instructions for every condition that the combine operator might encounter. The following suggestions are offered as a guide for remedying some of the more common difficulties met in combining.

### 1 Unthreshed Heads

This may be caused by insufficient or poorly regulated cylinder speed, improper concave clearance, irregular feeding, or the grain being too damp to combine.

- a. See that tractor or engine governor is regulated so that the proper speed is maintained.
- b. Increase cylinder speed.
- c. Check concave clearance. Try raising the concaves a little at a time and see if any improvement results. It is not advisable to reduce concave clearance any more than is absolutely necessary as it causes a waste of power and hinders separation by breaking up the straw too much.
- d. If these measures fail, the crop is probably too green or too damp to thresh and should be left to cure a little longer.

### 2. Cracking Grain

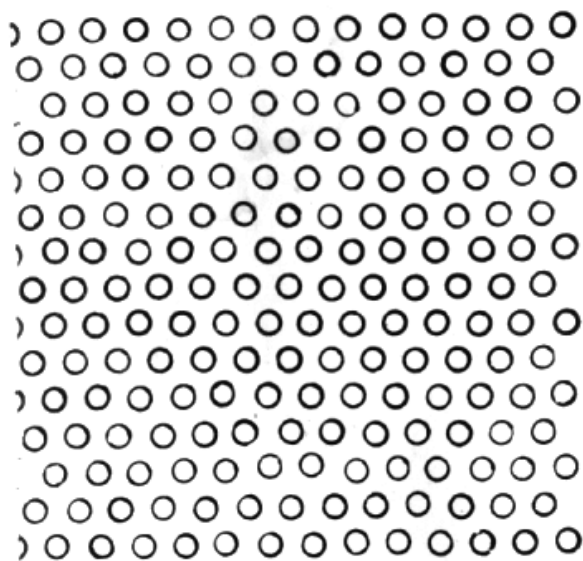
This may be due to excessive cylinder speed, insufficient concave clearance, or too much grain in the tailings.

- a. Examine the tailings. If there is more than a trace of threshed grain here, sieve and fan adjustments should be corrected. Try opening the adjustable sieves and increasing the air blast. If this fails to correct the trouble, try lowering the rear end of the shoe sieve so that the grain will flow through it more readily.
- b. Reduce cylinder speed.
- c. Increase concave clearance.

### 3. Losing Grain

This may be caused by irregular feeding, excessive cylinder speed, or improper sieve and fan adjustment.

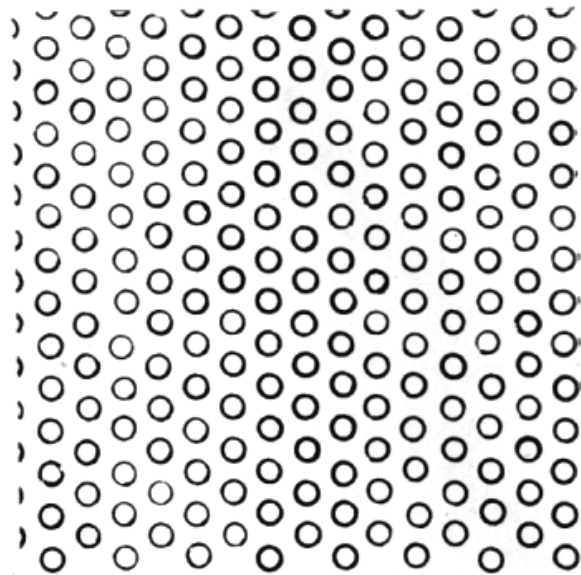
- a. If the grain is going into the feeder in bunches, correct the reel adjustment until feeding is even. Uneven feeding causes the straw to be deposited on the rack in bunches and hinders the separation process.
- b. Try catching a few handfuls of the material coming off of the sieves. If the loss of grain here is excessive try opening the chaffer sieve a little wider and increase the air blast. If grain is being blown over, decrease the air blast. If chaff is bunching up on the chaffer sieve, lower the chaffer extension so that movement of the material over the sieves will not be retarded. Here again the operator should remember that even feeding is important because for any one sieve setting the volume of material flowing over the sieves should remain as nearly constant as possible.
- c. If grain is being lost over the rack, reduce the cylinder speed.
- d. Check speed of straw rack. Always maintain a rack speed of 235 strokes per minute.



**Fig. 60**

**Finishing Sieve for Timothy**

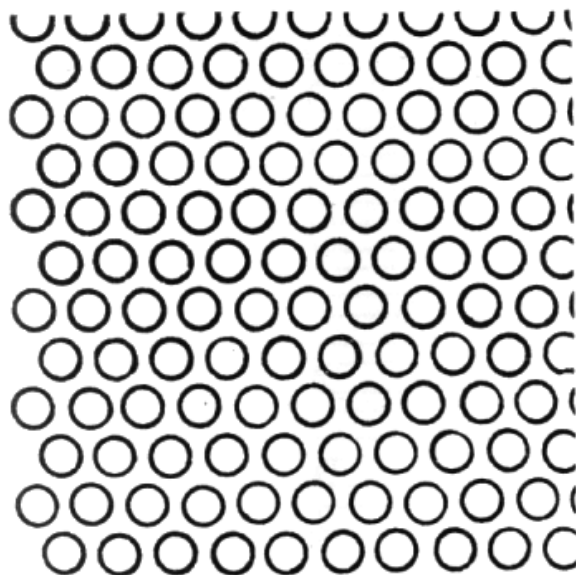
( $\frac{5}{64}$ " round hole)



**Fig. 61**

**Finishing Sieve for Clover and Alfalfa**

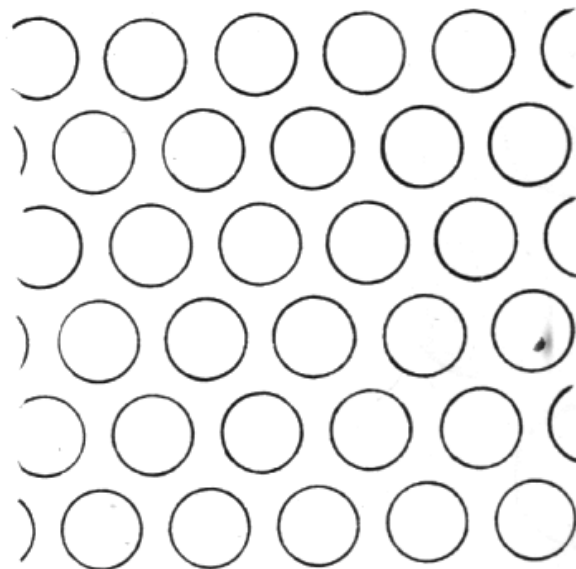
( $\frac{3}{32}$ " round hole)



**Fig. 62**

**Finishing Sieve for Flax and Lespedeza**

( $\frac{5}{32}$ " round hole)



**Fig. 63**

**Finishing Sieve for Buckwheat**

( $\frac{5}{16}$ " round hole)

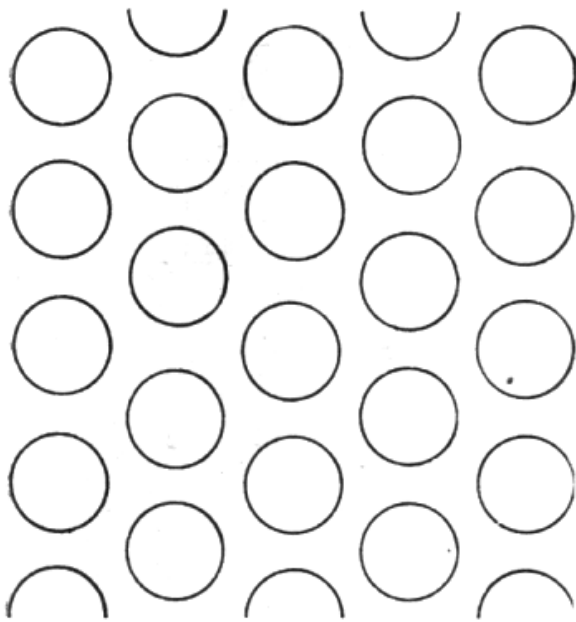


Fig. 64

Finishing Sieve for Soy Beans, etc.  
( $\frac{3}{8}$ " round hole)

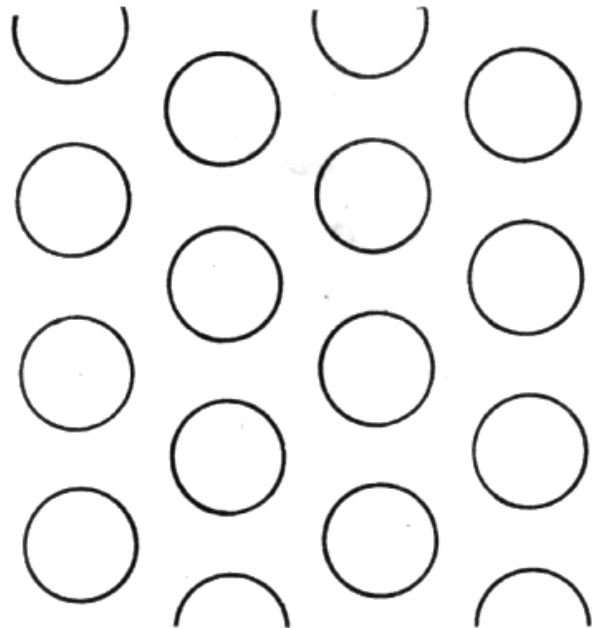


Fig. 65

Finishing Sieve for Pinto Beans, etc.  
( $\frac{7}{16}$ " round hole)

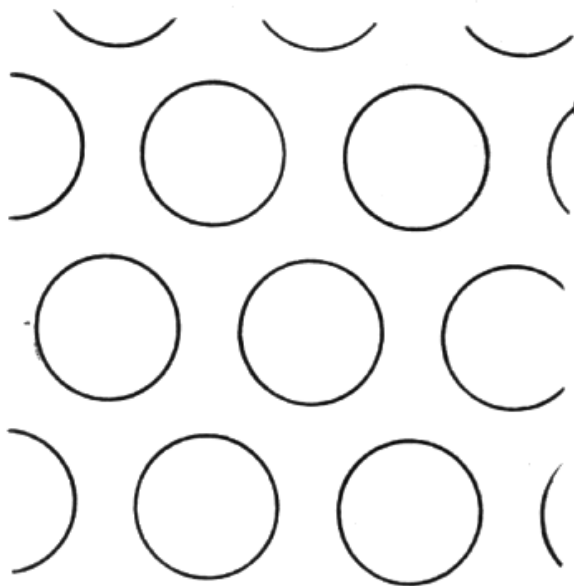


Fig. 66

Finishing Sieve for Kidney & Baby  
Lima Beans  
( $\frac{9}{16}$ " round hole)

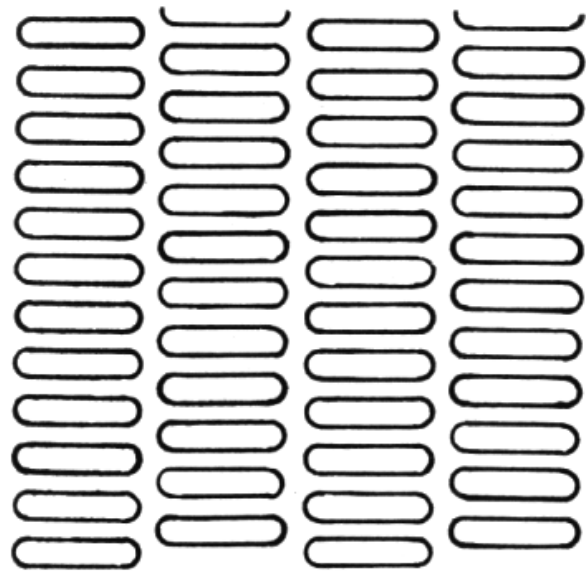


Fig. 67

Finishing Sieve for Orchard Grass  
( $\frac{3}{32}$ " x  $\frac{1}{2}$ " slotted hole)

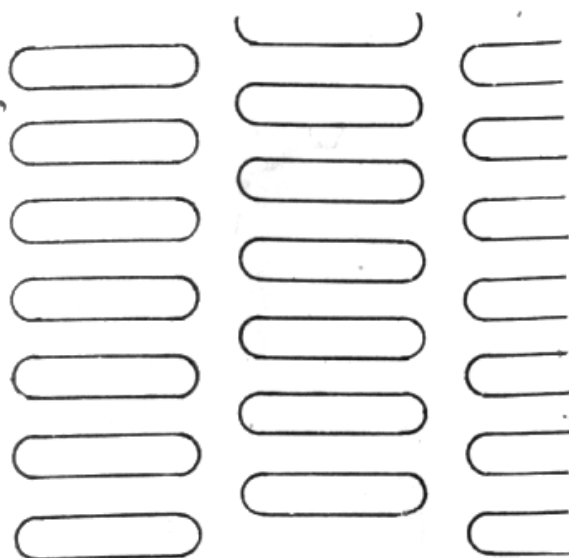


Fig. 68

Finishing Sieve for Vetch, Grass,  
Crotalaria, etc.

( $\frac{5}{32}$ " x  $\frac{3}{4}$ " slotted hole)

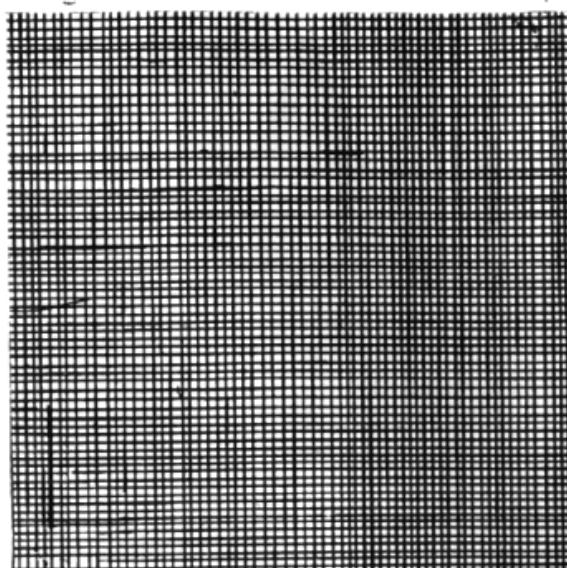


Fig. 69

Finishing Sieve for Red Top

(24 x 24" mesh)

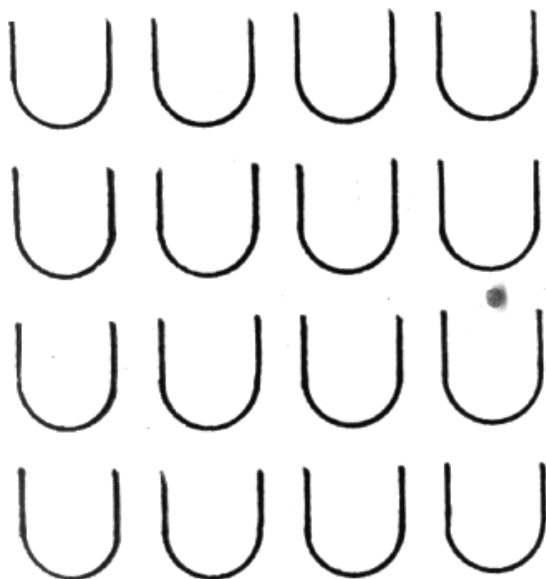


Fig. 70

Finishing Sieve for Peanuts

( $\frac{3}{8}$ " lip)

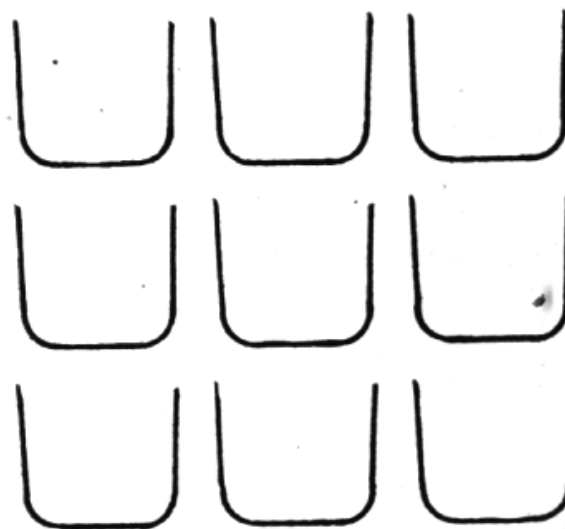


Fig. 71

Finishing Sieve for Peanuts

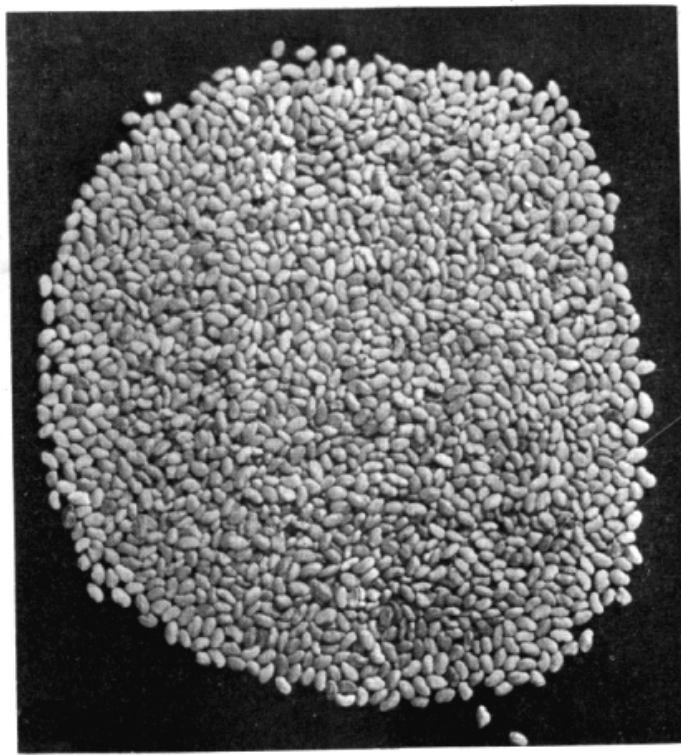
( $1\frac{1}{4}$ " lip) shown half size

Conveyor Sieve for Peanuts ( $1\frac{3}{4}$ " lip) not shown

# Cylinder Speeds, Concave Clearances, Concave Teeth, and Sieves Recommended for Various Crops

Crop	Cylinder Speed	Speed Range	Concave Clearance (rub bar)	Finishing Sieve Size or Holes
Alfalfa	1080-1300	1-2	$\frac{1}{16}$ "- $\frac{3}{8}$ "	$\frac{3}{32}$ "
Barley	1080-1300	1-2	$\frac{1}{4}$ "- $\frac{5}{8}$ "	None
Beets-Sugar	900-1080	2-3	$\frac{1}{8}$ "- $\frac{5}{8}$ "	$\frac{5}{16}$ "
Beans-Baby Lima	247- 295	12-13-14	$\frac{1}{4}$ "- $\frac{5}{8}$ "	$\frac{7}{16}$ "
Beans-Bountiful	247- 295	12-13-14	$\frac{1}{4}$ "- $\frac{5}{8}$ "	$\frac{7}{16}$ "
Beans-Great Northern	247- 295	12-13-14	$\frac{1}{4}$ "- $\frac{5}{8}$ "	$\frac{7}{16}$ "
Beans-Kidney	247- 295	12-13-14	$\frac{1}{4}$ "- $\frac{5}{8}$ "	$\frac{7}{16}$ "
Beans-Mexican Red	247- 295	12-13-14	$\frac{1}{4}$ "- $\frac{5}{8}$ "	$\frac{7}{16}$ "
Beans-Navy	295- 350	11-12	$\frac{1}{4}$ "- $\frac{5}{8}$ "	$\frac{3}{8}$ "
Beans-Pinto	247- 270	13-14	$\frac{1}{4}$ "- $\frac{5}{8}$ "	$\frac{7}{16}$ "
Beans-Soy	350- 505	8-9-10-11	$\frac{1}{4}$ "- $\frac{5}{8}$ "	$\frac{3}{8}$ "
Beans-Velvet	505- 618	6-7-8	$\frac{1}{4}$ "- $\frac{5}{8}$ "	$\frac{7}{16}$ "
Buckwheat	755-1080	2-3-4	$\frac{1}{4}$ "- $\frac{5}{8}$ "	$\frac{5}{16}$ "
Clover-Alsike	1080-1300	1-2	$\frac{1}{16}$ "- $\frac{3}{8}$ "	$\frac{3}{32}$ "
Clover-Crimson	1080-1300	1-2	$\frac{1}{16}$ "- $\frac{3}{8}$ "	$\frac{3}{32}$ "
Clover-Huban	1080-1300	1-2	$\frac{1}{16}$ "- $\frac{3}{8}$ "	$\frac{3}{32}$ "
Clover-Red	1080-1300	1-2	$\frac{1}{16}$ "- $\frac{3}{8}$ "	$\frac{3}{32}$ "
Clover-Sweet	1080-1300	1-2	$\frac{1}{16}$ "- $\frac{3}{8}$ "	$\frac{3}{32}$ "
Clover-White	1080-1300	1-2	$\frac{1}{16}$ "- $\frac{3}{8}$ "	$\frac{3}{32}$ "
Crotolaria	900-1080	2-3	$\frac{1}{4}$ "- $\frac{5}{8}$ "	$\frac{5}{32}$ " x $\frac{3}{4}$ "
Fenugreek	900-1080	2-3	$\frac{1}{4}$ "- $\frac{5}{8}$ "	$\frac{5}{32}$ " x $\frac{3}{4}$ "
Flax	1080-1300	1-2	$\frac{1}{16}$ "- $\frac{1}{4}$ "	$\frac{5}{32}$ "
Grass-Crested Wheat	1080-1300	1-2	$\frac{1}{16}$ "- $\frac{3}{8}$ "	$\frac{5}{32}$ " x $\frac{3}{4}$ "
Grass-Dallis	1080-1300	1-2	$\frac{1}{16}$ "- $\frac{1}{2}$ "	$\frac{5}{32}$ " x $\frac{3}{4}$ "
Grass-Johnson	1080-1300	1-2	$\frac{1}{16}$ "- $\frac{1}{2}$ "	$\frac{5}{32}$ " x $\frac{3}{4}$ "
Grass-Orchard	1080-1300	1-2	$\frac{1}{16}$ "- $\frac{1}{4}$ "	$\frac{3}{32}$ " x $\frac{1}{2}$ "
Grass-Sudan	1080-1300	1-2	$\frac{1}{16}$ "- $\frac{1}{2}$ "	$\frac{5}{32}$ " x $\frac{3}{4}$ "
Grain-Sorghums	900-1080	2-3	$\frac{1}{4}$ "- $\frac{5}{8}$ "	$\frac{5}{32}$ " x $\frac{3}{4}$ "
Lespedeza	900-1300	1-2-3	$\frac{1}{16}$ "- $\frac{3}{8}$ "	$\frac{5}{32}$ "
Millet	1080-1300	1-2	$\frac{1}{4}$ "- $\frac{5}{8}$ "	$\frac{5}{32}$ "
Oats	1080-1300	1-2	$\frac{1}{4}$ "- $\frac{5}{8}$ "	None
Peas-Field	490- 520	7-8-9	$\frac{1}{4}$ "- $\frac{5}{8}$ "	None
Peas-Garden Varieties	247- 350	11-12-13-14	$\frac{1}{4}$ "- $\frac{5}{8}$ "	None
Peanuts	295	12	$\frac{1}{2}$ "- $\frac{5}{8}$ "	$\frac{1}{4}$ " Lip
Radish	900-1080	2-3	$\frac{1}{16}$ "- $\frac{3}{8}$ "	$\frac{5}{32}$ "
Red Top	1080-1300	1-2	$\frac{1}{16}$ "- $\frac{1}{4}$ "	24x24 Mesh
Rice	520- 735	5-6-7	$\frac{1}{4}$ "- $\frac{5}{8}$ "	None
Rye	1080-1300	1-2	$\frac{1}{4}$ "- $\frac{5}{8}$ "	$\frac{5}{32}$ " x $\frac{3}{4}$ "
Spelt	1080-1300	1-2	$\frac{1}{4}$ "- $\frac{5}{8}$ "	None
Timothy	1080-1300	1-2	$\frac{1}{8}$ "- $\frac{3}{8}$ "	$\frac{5}{64}$ "
Vetch	1080-1300	1-2	$\frac{1}{4}$ "- $\frac{5}{8}$ "	$\frac{5}{32}$ " x $\frac{3}{4}$ "
Wheat	900-1300	1-2-3	$\frac{1}{4}$ "- $\frac{5}{8}$ "	$\frac{5}{32}$ " x $\frac{3}{4}$ "





**Fig. 72**

**Alfalfa**

## **ALFALFA**

This crop is usually handled by the windrow pickup method, but in some cases it can be harvested as a standing crop. The same rules which govern the combining of clover apply in a general way to the combining of alfalfa, although it is easier to rub alfalfa out of its pods than clover out of its heads.

For best results, the clover attachment consisting of special concaves and finishing sieve should be used.

The cylinder should run at 1080 to 1300 R.P.M.

The adjustable chaffer should be  $\frac{1}{3}$  open. Carefully adjust fan blinds to suit conditions.

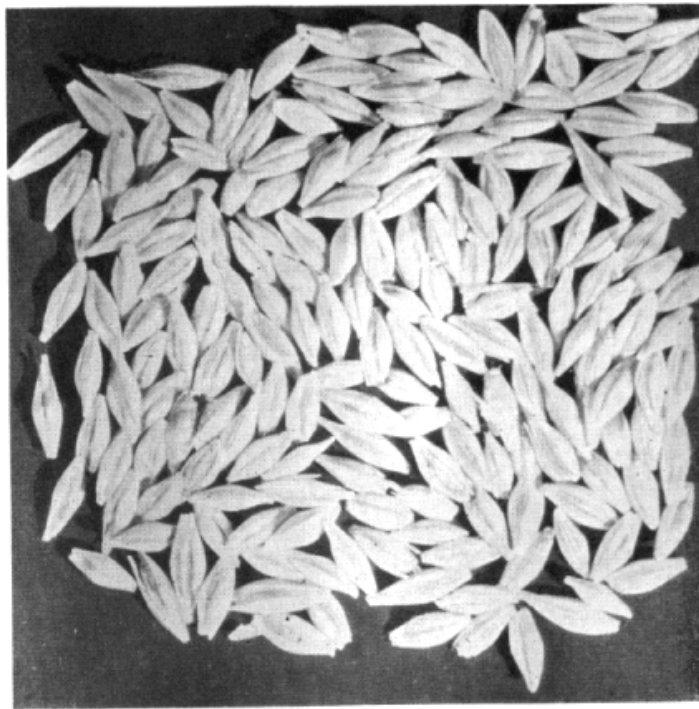


Fig. 73

Barley

## BARLEY

Barley can be harvested by the straight combining method except in localities where crops ripen unevenly or where heavy green weeds abound. In such cases the pickup method from windrows is recommended.

This is usually one of the easiest of grains to thresh, but it can be difficult to handle when the beards are tough and hard to knock off the kernels. To handle such grain, as many as six rows of concave teeth or five concave bars may be required.

When barley is sold for malting purposes it is important that there be no hulling or skinning of the grains in threshing. Cylinder speed and concave clearances should be adjusted accordingly.

The shoe sieve should be set one hole higher in the front than in the rear. By doing this, the kernels with beards adhering to them will be carried to the rear of the sieves, dropped into the tailings auger and returned to the cylinder for rethreshing. Another advantage of placing the sieve in this position is that in so doing the sieve receives a better blast of air from the fan. The chaff is thus easily lifted off, enabling the sieve to properly handle the large amount of chaff encountered in barley threshing.

Set the chaffer sieve  $\frac{2}{3}$  open or more with the chaffer extension  $\frac{1}{2}$  to  $\frac{2}{3}$  open. Open shoe sieve about  $\frac{1}{3}$ . Set fan shutters  $\frac{1}{2}$  open to fully open. Because of the tendency for beards to mat up on sieves, more wind is required for separating barley than for similar crops. Loss of barley over the sieves is generally caused by grain being carried over with the chaff due to lack of wind rather than its being blown.

## BEETS—SUGAR

This seed is usually grown in irrigated beds, two rows to the bed. It is cut by hand and piled in bunches for curing before being threshed. Bunches can then be pitched into the machine by hand or a pickup attachment may be used which will reduce loss of seeds from handling.

Set the chaffer sieve  $\frac{1}{2}$  open or more; chaffer extension  $\frac{2}{3}$  open. Open shoe sieve about  $\frac{1}{3}$  or replace with special finishing sieve with  $\frac{5}{16}$ " holes. Set fan shutters  $\frac{1}{2}$  open.

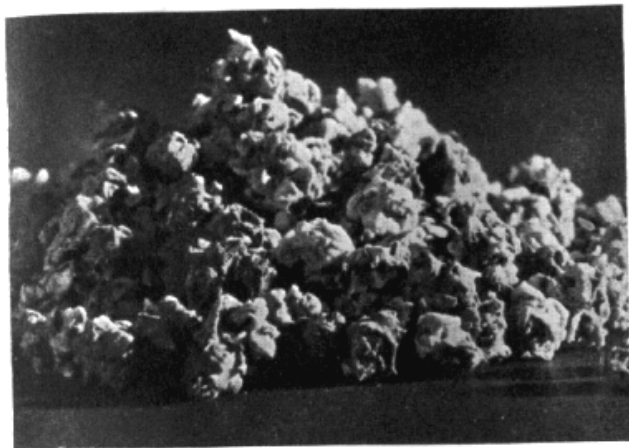


Fig. 74  
Beets Sugar



Fig. 75  
Navy Beans

BEANS—BOUNTIFUL  
BEANS—GREAT NORTHERN  
BEANS—MEXICAN RED  
BEANS—NAVY  
BEANS—PINTO

EDIBLE BEANS

Edible beans vary in size from the flat baby lima and large Great Northern to the small round pea bean. Some are easily threshed and crack easily; others are difficult to knock out of the pods and also crack easily; others do not crack so easy. The common practice with all edible beans is to pull them and leave to dry either in windrows or piles. They are then picked up with a pickup attachment or pitched on the platform from the piles. If the operator is careful to pull the beans when thoroughly ripened, doing it in the morning while the dew is on, he can thresh them that afternoon or possibly the next afternoon with a minimum of loss from both cracking and shattering. When beans lie too long, either in windrows or in piles, the cracking will be higher. If pulled and threshed too green, they spoil due to high moisture content.

There is no way to tell the number of acres that can be handled with one machine except by the experience of the operator in whatever territory that he may be combining. Attempting to handle too many acres always results in dissatisfaction because all of the beans cannot be threshed even when they are in the best threshing condition. Threshing when not in good condition causes loss from shattering, excess crackage, or spoilage due to high moisture content. There is a difference in the way edible beans grow; some have short bushes while others are inclined to vine. The more vine the less crackage, due to the cushion effect of the vine.

Best results in threshing can be obtained by using the edible bean attachment which includes special bean concaves, sand screens for grain and tailings auger trough, and special sprockets for header auger, fan, beater, and cylinder.

A finishing sieve with  $\frac{7}{16}$ " holes may be ordered extra to be used with the edible bean attachment.

The cylinder should run at approximately 295 R.P.M.

Care should be taken in adjusting the sieves to keep threshed beans in the tailings to a minimum in order to reduce crackage. Set the chaffer sieve  $\frac{1}{2}$  open or more. Chaffer extension should be  $\frac{2}{3}$  open. Lower rear end of finishing sieve if necessary. Set the fan shutters  $\frac{2}{3}$  open or more.

## BEANS—VELVET

Ordinarily a stationary threshing job. Use same general setting as for soy beans.

## SOY BEANS

There are many varieties of soy beans and they present widely different threshing problems. Soy beans are usually harvested by straight combining. They are not easily cracked as a rule, but the heavier growth and unevenly ripened pods prevalent with some varieties makes the job difficult.



Fig. 76  
Soy Beans

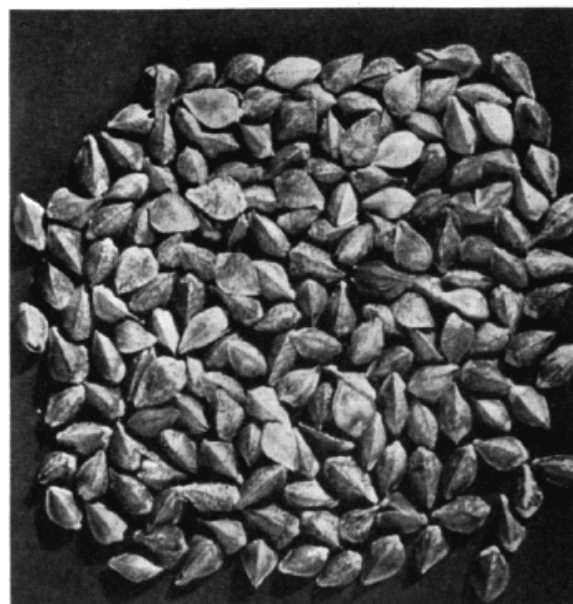


Fig. 77  
Buckwheat

The more easily threshed varieties or well ripened and dry beans require the lower cylinder speeds and the fewer concave teeth or bars. Tougher varieties will require a faster cylinder speed, possibly as much as 618 R.P.M. Use only a sufficient number of concave teeth or bars to thresh the beans from the pods thereby reducing crackage to a minimum.

The adjustable chaffer and chaffer extension sieves should be  $\frac{2}{3}$  open. Set shoe sieve about  $\frac{1}{2}$  open. For best results use special finishing sieve with  $\frac{3}{8}$ " holes in place of regular shoe sieve. Set fan shutters  $\frac{2}{3}$  open or more, using as much wind as possible without blowing good beans over.

## BUCKWHEAT

This crop can be straight combined. After the first frost, the blossoming of the crop is checked, then, after a few days the crop is ready to cut. Buckwheat can also be windrowed.

Buckwheat is easily knocked from the straw, so one row of concave teeth or one bar will usually prove sufficient. The straw is brittle and it is well to bear in mind that with it, as in other grains, the work of separation and cleaning is easier when the cylinder is not overloaded. The speed should be low to prevent cracking the grain.

Set the adjustable chaffer and chaffer extension sieves about  $\frac{2}{3}$  open. Set shoe sieve  $\frac{1}{4}$  to  $\frac{1}{3}$  open, or replace with special finishing sieve with  $\frac{5}{16}$ " holes. Adjust fan blast to meet conditions.

## CLOVER—ALSIKE

This crop is usually harvested from the windrow, using the pickup attachment. Should be cut when about  $\frac{3}{4}$  of the heads are ripe to avoid a great deal of shattering of seed.

For best results, the clover attachment consisting of special concaves and finishing sieve should be used.

Set the adjustable chaffer sieve  $\frac{1}{3}$  open or less; the chaffer extension about  $\frac{1}{3}$  open. Use special finishing sieve in place of shoe sieve; have the rear end of this sieve adjusted low. Use very little air.

## CLOVER—CRIMSON

This is usually harvested as a standing crop but is cut and cured in windrows in certain conditions. Should be harvested as soon as greater part of the heads are ripe, since a heavy rain will cause ripe heads to shatter. It is an extremely hard crop to thresh so that the maximum cylinder speed is often necessary. Travel at a slow speed and narrow the width of the cut if the cylinder is being over-crowded.

Use the clover attachment and same general sieve setting as for alsike clover.



### **CLOVER—HUBAN**

This may be harvested either as a standing crop or from the windrow.

Use the clover attachment for best results.

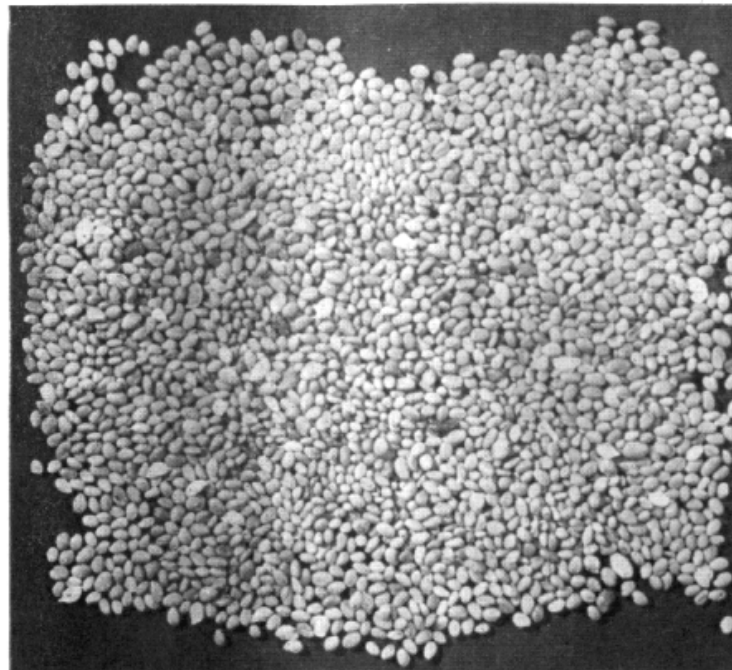
Set the chaffer and chaffer extension sieves  $\frac{1}{3}$  open or less. Use special sieve in place of shoe sieve. Set fan shutters about  $\frac{1}{3}$  open.

### **CLOVER—RED**

This crop is combined from the windrow, using the pickup attachment. It should be threshed as soon as it is thoroughly dried.

Use clover attachment for best results.

Sieves should have same general setting as for Huban Clover, using very little air.



**Fig. 78**

**Sweet Clover**

### **SWEET CLOVER**

This is usually harvested as a standing crop. When the crop is rank, carry the header as high as possible without wasting the seed. As red clover ripens unevenly, harvesting should begin as soon as a large proportion of the crop is ready. Use a slow reel speed to prevent shattering of seed.

Use the clover attachment for best results.

Set chaffer and chaffer extension sieves about  $\frac{1}{2}$  open. Use special sieve in place of shoe sieve; open fan shutters about  $\frac{1}{3}$ .

### **CLOVER—WHITE**

Use same general setting as for alsike clover.

## CROTOLARIA

This is usually harvested as a standing crop and should be harvested as soon as the seed is ripened to prevent heavy shattering. Cut as high as possible.

Open chaffer and chaffer extension sieve about  $\frac{1}{3}$ . Open shoe sieve about  $\frac{1}{4}$  or replace with special  $\frac{5}{32}$ " x  $\frac{3}{4}$ " slotted hole sieve. Open fan shutters about  $\frac{1}{2}$ .

## FENUGREEK

This crop when grown alone should be cut, windrowed, allowed to dry and picked up using a pickup attachment. When grown with another grain crop, the two can be harvested together as a standing crop.

Open the chaffer and chaffer extension sieves  $\frac{1}{3}$  or more. Set the shoe sieve open  $\frac{1}{4}$  or more, or replace with a special  $\frac{5}{32}$ " x  $\frac{3}{4}$ " slotted hole sieve. Open fan shutters about  $\frac{1}{2}$ .

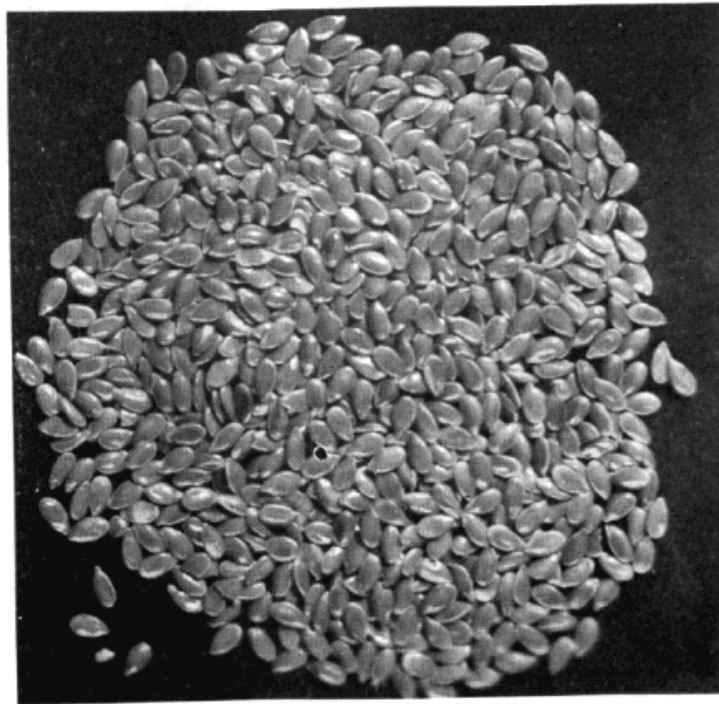


Fig. 79

Flax

## FLAX

Flax differs from many crops in that quite often the bolls are ready for threshing before the straw has ripened.

Flax is generally cut and windrowed. It can be harvested as a standing crop, but there will be many unmaturred seed bolls. A windrowed, well dried crop usually produces better threshing conditions.

It is very important that the cylinder be fed evenly and that the machine be kept up to speed at all times. When flax is green or damp, it requires close work on the part of the cylinder and concaves to get the seed out of the bolls.

The chaffer and chaffer extension should be set about  $\frac{1}{2}$  open. Set shoe sieve  $\frac{1}{4}$  open or replace with a special sieve with  $\frac{5}{32}$ " holes. Open fan shutters about  $\frac{1}{2}$ .

## GRASS—CRESTED WHEAT

Harvest as a standing crop since under favorable conditions it will grow to a height of 2 to 3 feet. As the stem remains green after the seed has ripened, the header should be carried as high as possible to avoid handling an excessive amount of green material.

Open the chaffer sieve  $\frac{1}{3}$  or more; the chaffer extension  $\frac{1}{2}$  open. Set the shoe sieve about  $\frac{1}{4}$  open or replace with a special  $\frac{5}{32}$ " x  $\frac{3}{4}$ " slotted hole sieve. Use very little air.

## GRASS—DALLIS

Dallis grass has a tendency to fall down, become tangled and mat. It is therefore usually harvested from the windrow. However, a good standing crop can be handled satisfactorily with straight combining methods.

Use same general sieve setting as for Crested Wheat Grass. The rear end of the shoe or finishing sieve should be lowered, thereby aiding the cleaning process.

## GRASS JOHNSON

This is sometimes harvested as a standing crop, but because of the rank growth better results can be had if the crop is windrowed and allowed to cure before combining.

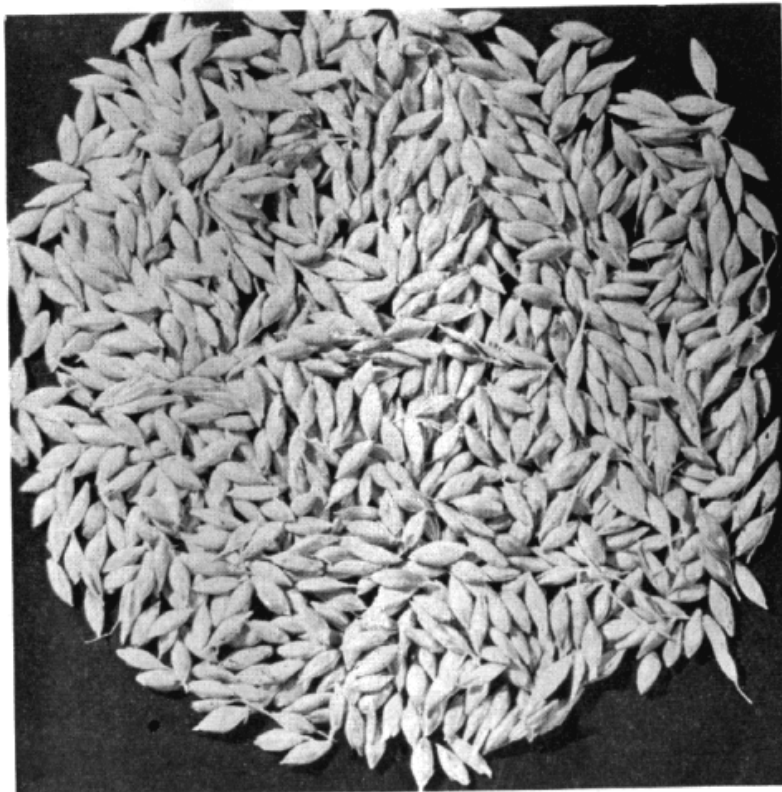


Fig. 80

Sudan Grass

Open the chaffer sieve  $\frac{1}{3}$  or more; the chaffer extension about  $\frac{1}{2}$  open. Set the shoe sieve about  $\frac{1}{4}$  open or replace with a special  $\frac{5}{32}$ " x  $\frac{3}{4}$ " slotted hole sieve. Open fan shutters about  $\frac{1}{3}$ .

## GRASS—SUDAN

Usually harvested as a standing crop.

Use same general setting as for Johnson Grass.

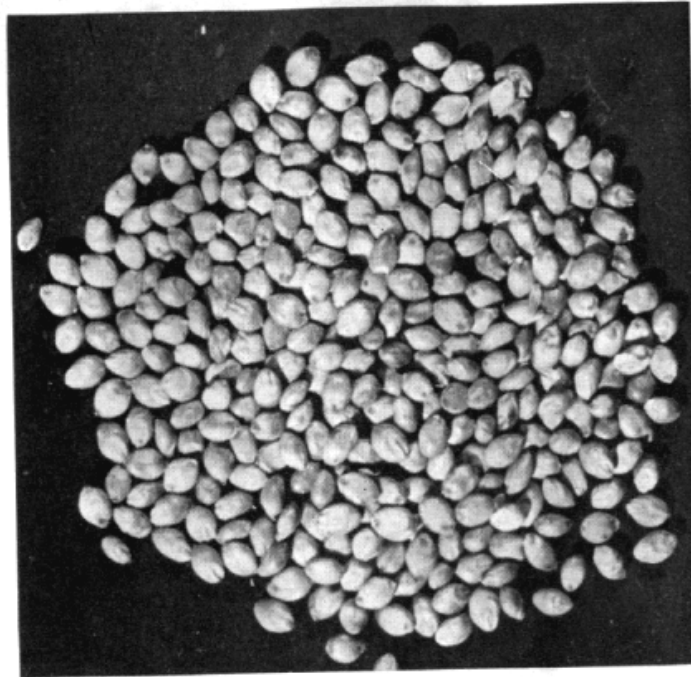


Fig. 81

Grain Sorghums

## GRAIN—SORGHUMS

There are many different kinds of grain sorghums having a wide range of threshing characteristics. The more common classes of grain sorghums are: Milo, Kaffir, Hegari, Durra, and Darso. Under each of these classes there are many varieties. Some of the taller varieties must be threshed from the shock. There are, however, a number of varieties that are adapted to straight combining. Some of the best combining varieties are: Wheatland, Double Dwarf Milo, Sooner Milo, and Beaver.

When threshing grain sorghums, try to use the lowest practical cylinder speed and avoid having too small a concave clearance. This is to keep to a minimum the amount of ground stalks going into the threshed grain. This material may raise the moisture content of the grain and cause it to heat.

Set the chaffer and chaffer extension sieves about  $\frac{1}{2}$  open. Open the shoe sieve  $\frac{1}{4}$  or more, lowering rear end of sieve if necessary. A special  $\frac{5}{32}$ " x  $\frac{3}{4}$ " slotted hole sieve may be used in place of the regular shoe sieve. Open the fan shutters about half way.

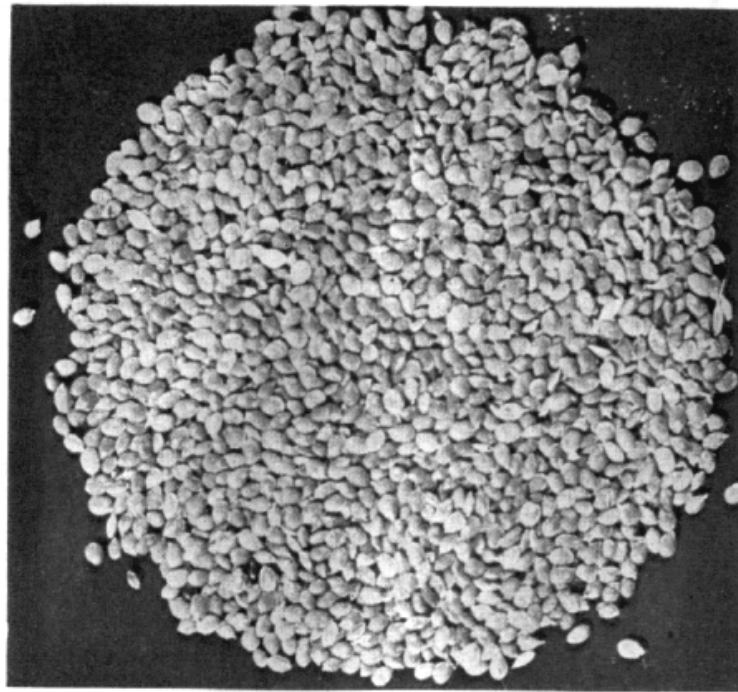


Fig. 82  
Lespedeza

## LESPEDeza

Lespedeza is usually harvested as a standing crop but can be windrowed. It should be cut when the crop is on the green side to prevent shattering.

Lespedeza is wiry and hard to cut so it is important that cutting parts are kept in good condition. The lespedeza attachment which includes a special  $\frac{5}{32}$ " hole finishing sieve should be used.

The adjustable chaffer and chaffer extension sieves should be set about  $\frac{2}{3}$  open. Care should be taken to adjust fan blinds so as not to blow seed over.

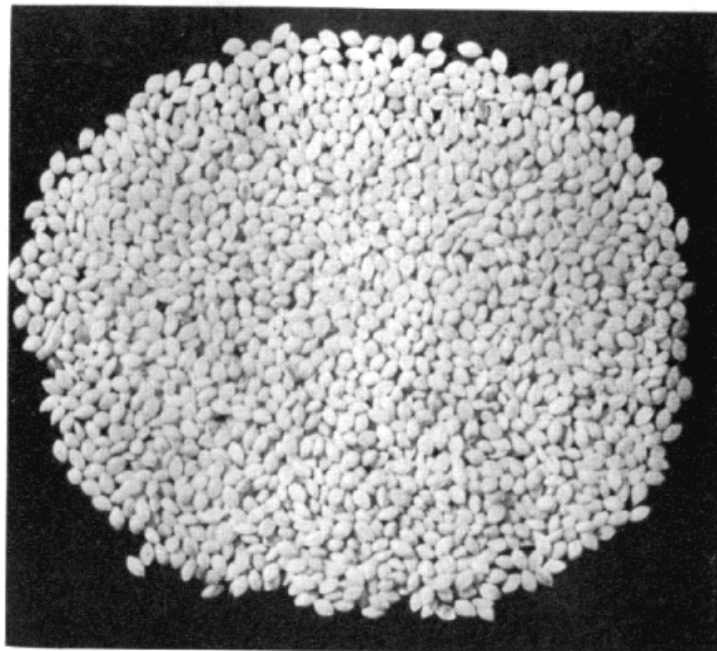


Fig. 83  
Millet

## MILLET

Can be harvested as a standing crop, but is often cut and windrowed so straw will be in better condition when used for feed. When straight combining use a slow reel speed as the ripe grain shatters very easily.

Set chaffer and chaffer extension sieves about  $\frac{1}{2}$  open. Use special  $\frac{5}{32}$ " hole finishing sieve in place of regular shoe sieve. Set fan shutters about half open.

There are several varieties of millet harvested but the same general setting will apply to all varieties.



Fig. 84

Oats

## OATS

Although a large portion of this crop is harvested by straight combining, windrowing is recommended when the crop is infested with green weeds or when ripening is uneven. Green weeds in the grain provide a source of moisture which increases the hazard of spoilage due to heating of the grain. Windrows will allow these green weeds to dry out and reduce this hazard.

Set the chaffer and chaffer extension sieves  $\frac{2}{3}$  open, and the shoe sieve about  $\frac{1}{2}$  open. Set the fan shutters  $\frac{1}{2}$  open or less.



## PEANUTS

Peanuts are generally planted in rows 28 to 36 inches apart. When ripe they are plowed up and converted into even windrows for drying. A pickup attachment should be used to lift the peanuts from the windrow and deposit them on the header platform canvas. Maintain a steady, even feed into the machine to avoid overloading and slugging of the cylinder. A slow cylinder speed is recommended.

Use peanut attachment consisting of special sieves, sand screens, concaves, and sprockets to change speeds on various combine units.

Use special conveyor chaffer sieve and set about  $\frac{2}{3}$  open. Set chaffer extension  $\frac{2}{3}$  to fully open. Use special finishing sieve and set about  $\frac{1}{2}$  to  $\frac{2}{3}$  open. Fan shutters should be set fully open.

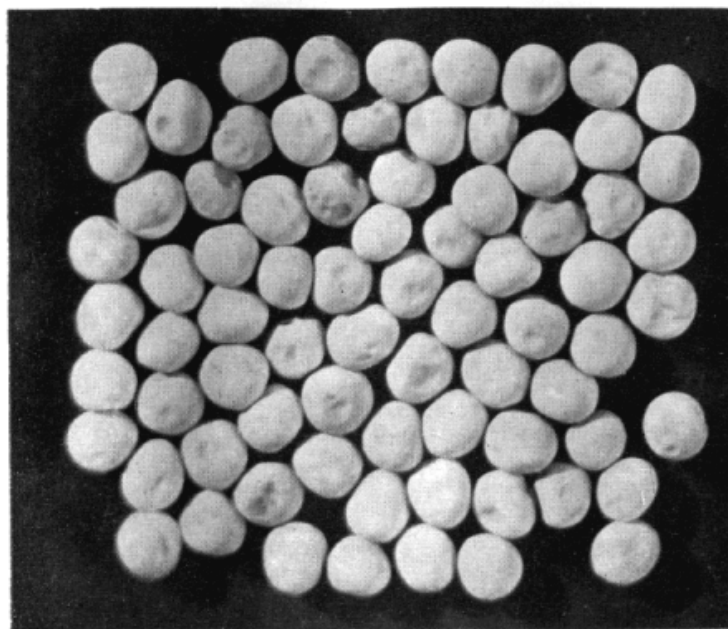


Fig. 85

Peas

## PEAS-FIELD

There are two general classes of peas harvested; field peas and the garden peas, each class of which has many varieties.

The field group of which the Austrian Field Pea and Lady Pea are examples does not require the low cylinder speed that the garden varieties do. They may be harvested either as a standing crop or from the windrow. Peas of any variety which lay in windrows or stand in the field for a considerable time after they are dry enough to thresh will crack more easily than if threshed as soon as sufficiently dry. Maintain a steady feed into the machine as the vines help cushion the peas and reduce crackage.

Set the chaffer and chaffer extension sieves about  $\frac{2}{3}$  open. Set the shoe sieve about  $\frac{1}{2}$  open, lowering rear end of the sieve. Open fan shutters  $\frac{2}{3}$  to full open.

## PEAS—GARDEN VARIETIES

This group is usually harvested in much the same manner as edible beans, and the edible bean attachment may be used.

Use same sieve and fan adjustment as for field peas.

## RADISH

This can be combined as a standing crop after one or two heavy frosts in the fall. Because of the pithy nature of the pods, the seed is very difficult to thresh.

Set the chaffer and chaffer extension sieves about  $\frac{1}{2}$  open. Set shoe sieve  $\frac{1}{3}$  open or replace with a special  $\frac{5}{32}$ " hole finishing sieve. Open fan shutters about  $\frac{1}{3}$ .

## RED TOP

This is usually harvested as a standing crop.

Open the chaffer and chaffer extension sieves no more than necessary. Use a special 24 x 24 mesh screen in place of regular finishing sieve. Close the fan shutters completely and cover the screen openings with burlap bags.

## RICE

Rice is usually a tough grain to thresh, being very hard to knock out of the head. It should be threshed as soon as possible after ripening as it is liable to sun crack if left in the field too long. A high cylinder speed is recommended.

Set chaffer and chaffer extension sieves  $\frac{1}{2}$  to  $\frac{2}{3}$  open. Set shoe sieve about  $\frac{1}{3}$  open, and fan shutters  $\frac{1}{3}$  to  $\frac{1}{2}$  open.



Fig. 86

Rye

## RYE

Rye usually grows quite rank and tall and is easy to knock out of the heads. When damp, the straw is tough and as it is usually long, it may require 4 rows of concave teeth or 4 concave bars depending upon the condition of the grain. Rye, being smaller and lighter than wheat, requires a closer sieve setting and a little less air blast.

The adjustable chaffer and chaffer extension sieves should be set about  $\frac{1}{2}$  open; the shoe sieve  $\frac{1}{3}$  open, or replaced with a special  $\frac{5}{32}$ " x  $\frac{3}{4}$ " slotted hole sieve. Set fan  $\frac{1}{3}$  to  $\frac{1}{2}$  open and adjust tailboard quite high.



Fig. 87

Spelt

## SPELT

Use about the same setting as for oats.



Fig. 88

Timothy

## TIMOTHY

Harvest as a standing crop after the seed has ripened sufficiently. Waiting too long will allow seed to shatter and be lost. Carry the header as high as possible to avoid taking in an excessive amount of green material.

Although this seed when properly ripened is not hard to thresh, the cylinder speed should be kept up to 1080 R.P.M. Six rows of concave teeth or 4 to 5 concave bars may be necessary as it usually takes considerable rubbing to loosen the seeds from the heads.

When seed is ripe and dry, the cylinder speed may be lowered considerably as a low speed favors the shoe in handling this small and rather light seed.

The adjustable chaffer and chaffer extension sieves should be about  $\frac{1}{2}$  open; the shoe sieve well closed, or replaced with a special  $\frac{5}{64}$ " hole finishing sieve. Care should be taken to adjust fan blinds so as not to blow seeds over.

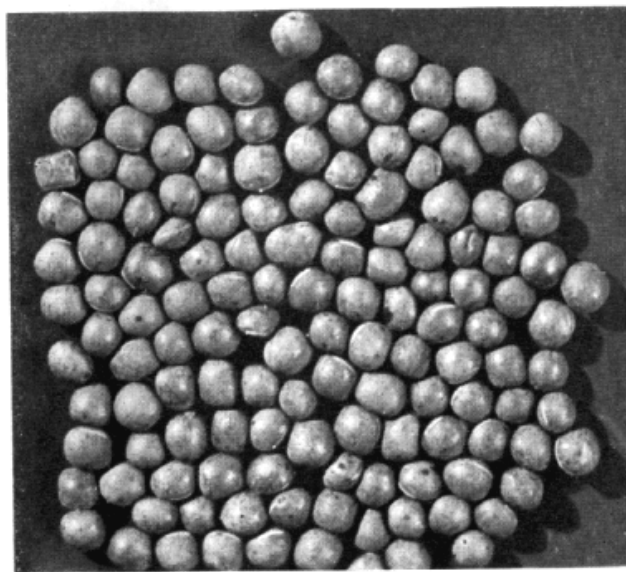


Fig. 89

Vetch

## VETCH

Vetch can be cut and windrowed or harvested as a standing crop. Should be cut when lower pods are brown and upper pods are well filled. Lower pods will open before all pods are brown and loss of seed will be considerable as a result.

Sieve and fan adjustments are the same as for wheat.

## WHEAT

Wheat is probably the most important crop harvested by combining and is generally harvested as a standing crop. The exceptions are where crops ripen unevenly due to atmospheric conditions or where green crops or green weeds abound. The crop should be cut as high as the lowest heads will permit. In a

crop that is badly down, or where large volumes of straw must be taken, the tractor should be operated in low gear. In extreme cases where there are many down spots in a field, less than a full swath should be taken.

The many varieties and harvesting conditions require a wide range of speeds. It is not advisable to use less than the recommended concave clearance for wheat as it wastes power and may cause loss of grain due to poor separation. Depend on changing the cylinder speed rather than concave clearance to take care of varying conditions. Do not use more cylinder speed than is necessary as excessive cracking may result.



Fig. 90  
Wheat

The ordinary varieties of wheat, such as Blue Stem, Fife, etc., can usually be threshed with 2 to 4 rows of concave teeth or 3 to 4 concave bars, but in some cases it may be advisable to use 6 rows of concave teeth or 5 rows of concave bars. The cylinder should run at a normal speed of 1080 R.P.M. and the concaves should be carried quite high. This, however, as well as the number of rows of teeth or bars necessary, will depend on the condition of the grain.

Good operators judge by the work the machine is doing whether or not changes in the adjustments or arrangements of concaves or in a speed will improve the work. For example, if the wheat is thoroughly knocked out of the heads and there is an excessive amount of chaff and chopped straw, it would be well to see if the kernels could still be threshed clean from the straw if one less concave was used, or the speed lowered slightly. If this change is made, the work of the machine as a whole will be improved for separation, and cleaning is made easier by reducing the amount of chopped straw.

The adjustable chaffer extension and shoe sieve can be adjusted after the machine has operated some distance around the field, the operator noting how

much chaff each is handling, how the wheat is cleaned and the amount of tailings being returned. Gradually close the chaffer sieve until some wheat is coming over, then open up until no grain is coming over. The chaffer is then doing its maximum. Open chaffer extension  $\frac{1}{2}$  to  $\frac{2}{3}$ ; open shoe sieve  $\frac{1}{3}$  or more, lowering rear end of sieve if necessary. Special sieve with  $\frac{5}{32}$ " x  $\frac{3}{4}$ " slotted holes may be used in place of regular shoe sieve. Open fan shutters about halfway.

\* \* \* \* \*

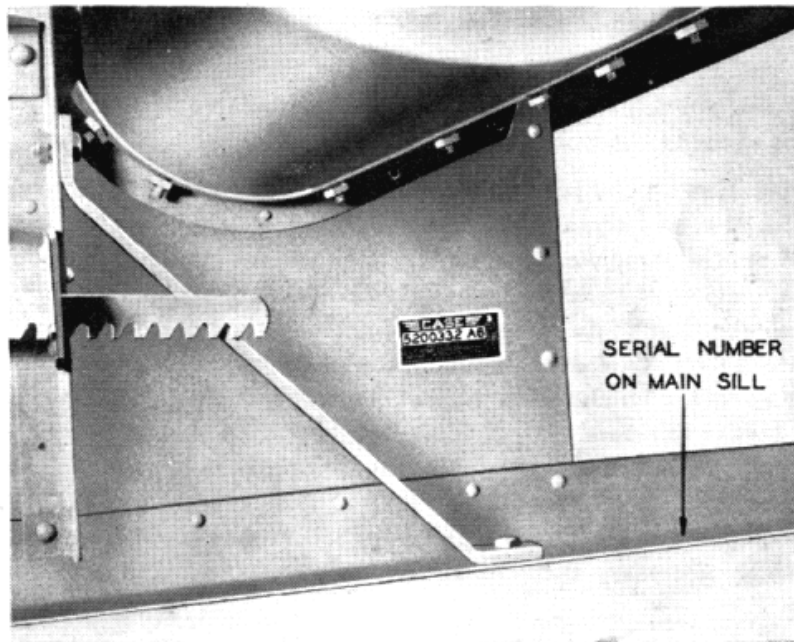


Fig. 91  
Serial Number Locations

## SERIAL NUMBER

When ordering parts through your local Case dealer, always give the serial number of your combine. This number is found on the name plate located on the right hand side of machine directly below the header auger trough. It is also stamped on the right hand main sill near the name plate.



**All Case products are sold subject to the following Warranty.**

## **WARRANTY**

The J. I. Case Company, hereinafter called "Company", warrants each Case machine (except belting, canvasses, magnets, carburetors and other attachments, devices or equipment not made by it and which may be warranted by the respective makers but are not warranted by the Company):

1. To be well made of good material and to be durable with good care.

(a) If any part made by the Company shall fail from defect in material during the first season's use, and, within ten days after such failure, written notice is given to the Dealer from or through whom said part was purchased, it will be replaced free upon presentation at the factory, subject to the option of the Company to repair the same.

(b) No claim shall be allowed for breakage of hardened moldboards, shares, landsides, cultivator shovels, plow disks, harrow disks or spring tooth harrow teeth, excepting upon manifest defect in material or labor, and in no case after they have been heated outside the Company's factory.

2. If properly set up, adjusted, and operated by competent persons, to be capable under ordinary conditions of doing the work for which it is designed.

(a) If upon operation by the purchaser in the manner aforesaid for two days any Case machine shall fail to fulfill such warranty, written notice thereof shall be given at once to the dealer from or through whom the same was purchased. If the dealer does not remedy the defect within two days after notification, then immediate written notice of the defect particularly describing the same, specifying the time of discovery thereof and the time of notification to the dealer shall be given by registered letter to J. I. Case Company at its branch house having jurisdiction over such dealer's territory, after which notice reasonable time shall be given to the Company to either send a competent person to remedy the defect or suggest by letter the remedy of the defect, if it be of such a nature. If the machine is found by the Company to be defective in material or workmanship, then the Company will see to it that the defect is remedied, otherwise, purchaser agrees to pay the expenses incurred by the Company with reference thereto and in any event purchaser agrees to render necessary and friendly assistance without compensation.

(b) If, after such notice and opportunity to remedy the difficulty, the Company fails to make the machine fulfill the warranty, the part that fails shall be returned immediately by the purchaser, free of charge, to the place from whence it was received and the Company notified thereof at its Branch House aforesaid, whereupon the Company shall have the option to furnish another machine or part in place of the one so returned which shall fulfill the warranty, or to cause to be returned the money and notes or proportionate part thereof received for such machine or part and no further claim shall be made.

(c) Failure to give notice, or the use of the machine after the two (2) day limit aforesaid without giving such notice, or failure to return such machine or part as aforesaid shall be conclusive evidence of due fulfillment of the warranty.

3. There is no express, implied or statutory warranty by the Company of any nature whatsoever other than or different from the conditional warranty aforesaid.

4. Any order under this warranty is divisible as to each machine and attachment ordered and the failure of any machine or attachment to fill the warranty shall not affect the liability of the purchaser for any other machine or attachment.

5. The Company's liability for any breach of this warranty is limited to the return of cash and/or notes actually received by it on account of the purchase price of said machine or part.

6. The placing upon any Case machine or implement of any part, attachment or equipment not manufactured or sold by J. I. Case Company or authorized by it, shall operate to void and waive any warranty whatsoever by J. I. Case Company.

## This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

## This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are approximately 20 lines visible. On the left side, there is a vertical margin line, creating a narrow left margin. The paper appears slightly aged or off-white. There are some faint, dark smudges or stains, particularly near the top left corner and along the right edge. The overall appearance is that of a clean but slightly worn piece of stationery.

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# NOTICE

## Insist on **GENUINE CASE PARTS**

**CASE** made parts fit and insure satisfactory service because they are made from the original patterns and of the same materials as used in new machines. . . . .

•  
**FOR SERVICE AND PARTS**

*See Your Case Dealer*

**Always Give Model and Serial Number of Machine**

NOTE: The J. I. Case Company reserves the right to make improvements in design or changes in specifications at any time without incurring any obligation to install them on units previously sold.



# CASE



## Modern Farm Machines

### TRACTORS

- Farm Tractors
- General Purpose Tractors
- Cane Field Tractors
- Industrial Tractors
- Engine Units

### GENERAL PURPOSE TRACTOR IMPLEMENTS

- Runner Planters
- Buster Planters
- Listers
- Cultivators
- Listed Crop Cultivators
- Power Mowers
- Middle Busters
- Mounted Plows
- Beet Pullers

### THRESHERS

- Grain Threshers
- Rice Threshers
- Pea and Bean Threshers
- Clover and Alfalfa Threshers
- Peanut Threshers

### COMBINES

- Grain Combines
- Bean Combines
- Hillside Combines
- Windrowers
- Pick-up Attachments

### PLOWS

- Tractor Moldboard Plows
- Two Way Plows
- Tractor Disk Plows
- Wheatland Disk Plows
- Turnover Plows

### HARROWS

- Tractor Disk Harrows
- Offset Disk Harrows
- Wide Cut Disk Harrows
- Brushland Disk Harrows
- Spike Tooth Harrows
- Spring Tooth Harrows

### HARROWS—Cont.

- Roller Packers
- Orchard Disk Harrows
- Horse Disk Harrows

### PLANTERS AND LISTERS

- Corn Planters
- Cotton and Corn Planters
- Corn Listers
- Cotton and Corn Listers

### DRILLS

- Seedmeter Grain Drills
- Fertilizer Grain Drills

### CULTIVATORS

- Listed Crop Cultivators
- Field Tillers
- Rotary Hoes

### HAY MACHINERY

- Mowers
- Sulky Rakes
- Side Delivery Rakes
- Hay Loaders
- Hay Balers
- Pick-up Hay Balers

### BINDERS

- Power Grain Binders
- Power Rice Binders
- Power Corn Binders

### BEET AND BEAN MACHINERY

- Beet and Bean Planters
- Beet and Bean Cultivators
- Bean Cutters
- Beet Pullers

### OTHER MACHINES

- Corn Pickers
- Corn Picker-Shellers
- Hammer Feed Mills
- Silo Fillers
- Forage Cutters
- Manure Spreaders
- Farm Trucks and Trailers

Established 1842

**J. I. CASE CO.** Incorporated

**RACINE**

**- WISCONSIN**

**- U. S. A.**